

## **Performance Monitoring and Improvement: A Manual and Trainer's Guide**

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# Performance Monitoring and Improvement

A Manual and Trainer's Guide



# GUIDELINES FOR PERFORMANCE MONITORING & IMPROVEMENT OF PRIMARY HEALTH CARE SERVICES AT DISTRICT LEVEL

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## ACRONYMS

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AC	Adequate Coverage
ARI	Acute Respiratory Infection
BCG	Bacillus Calmette and Guérin vaccine (to prevent tuberculosis)
CHW	Community Health Worker
CPR	Contraceptive Prevalence Rate
CYP	Couple Years of Protection
EPI	Expanded Program of Immunization
FP	Family Planning
IEC	Information, Education, and Communication
IPPF	International Parenthood Planning Foundation
LGAS	Lot Quality Assurance Sampling
MCH	Maternal and Child Health
M & E	Monitoring and Evaluation
MIS	Management Information System
MOH	Ministry of Health
PHC	Primary Health Care
PHN	Population, Health, and Nutrition
PMI	Performance Monitoring and Improvement
PNC	Prenatal Care Consultation
PSC	Preschool Consultation
SANRU	Santé Rural (DR Congo's Primary Health Care Project)
SDP	Service Delivery Point
TFR	Total Fertility Rate
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

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## **I. OVERVIEW OF PERFORMANCE MONITORING AND IMPROVEMENT (PMI)**

### **A. Background**

The 1978 Alma Ata conference strongly reaffirmed that **health**, defined as a state of complete physical, mental, and social wellbeing and not merely an absence of disease or disability, is a fundamental human right. The conference recognized primary health care (PHC) strategy as the means by which the attainment of the highest level of health can be achieved.

Since the PHC strategy was launched at the Alma Ata conference, many developing countries have taken a more selective and sometimes vertical approach to development programs that deal with specific health problems. Some other countries have adopted a broader approach to program development that involves the overall health system, with a particular focus on the primary level facilities (e.g., health centers, and health posts) and the communities they serve. In these countries, the evaluation aspect is sometimes missing and, when included, is often irrelevant. The evaluation of PHC programs is often used to answer a yes or no question, to evaluate the program, or to collect data that supports ones' point of view (Penelope Harve et al., 1991). Most of the program evaluations have failed to properly address the issue of improving the program's performance and effectiveness. The evaluation is generally planned for the end of the PHC project and has been mostly concerned with the results as such and not much with the improvement of the program.

It should also be recognized that proper evaluation of PHC programs requires significant resources, including knowledgeable and skilled personnel, for full implementation. As noted above, the emphasis of such evaluations has previously been on measurement of results and analysis of morbidity and mortality trends as they relate to the target diseases of the PHC programs. This type of information is not readily usable for daily activities at the district level and has not addressed the fundamental issues of effective management of PHC activities at the district and operational level.

Therefore, providing an enabling environment and tools to health workers (managers, supervisors, and nurses) through PMI will allow said health workers to track changes at the health facility level in service delivery and will facilitate the achievement of program objectives.

### **B. Introduction to the PMI Manual**

Since the launch and implementation of PHC activities in many developing countries over the last three decades, experts have recognized the following factors as having contributed to the non-achievement of good health for all by the year 2000:

- Insufficient public funding for the PHC programs which depend heavily on external resources for including family planning

- Continued low coverage of the target population with priority PHC interventions which, in many African countries, do not include family planning
- Lack of an enabling environment, including lack of availability of qualified personnel and lack of well-informed communities that can ensure effective implementation of programs
- Weak or absent appropriate management strategies, particularly at the operational level, that allow health workers to regularly improve use of existing limited resources in the most effective and efficient manner

This manual is designed to provide a comprehensive review and presentation of the PMI approach. Most of the contents of the manual come from the original version that was developed and published in partnership with the Primary Health Care Division of the Senegal Ministry of Health and Social Welfare and its many collaborative organizations, including WHO, UNICEF, and GTZ. The manual covers the approach in theory and practice, while the related trainer's guide provides the step-by-step procedures for planning and conducting a workshop on PMI.

This manual and its annexes (*Tools and Approaches for Performance Monitoring and Improvement* and the *Training Guidelines*) are designed to serve as a guide for training program managers, supervisors, and health workers (including nurses and paramedical staff) within government and non-governmental organizations who are working in the areas of PHC program implementation in Africa.

The main objective in the development of this manual was to contribute to the refinement and use of the management tool known as “performance monitoring,” which was launched by UNICEF and WHO in the 1990s within the implementation of the Bamako Initiative. Performance monitoring allows health workers to check on progress with planned PHC activities at primary facilities level (health centers and health posts). The use of this manual will also ensure the integration of family planning activities within the essential PHC package, as proposed at the Alma Atta conference.

## II. PERFORMANCE MONITORING AND IMPROVEMENT OF PROGRAMS

### A. Background on Programs and Projects

The seventh recommendation of the Alma-Ata conference states: “Primary health care (PHC) should address the main health problems while promoting maximum community involvement. PHC includes maternal child health, immunizations, nutrition, local endemic disease control, water and sanitation, health education, essential medicines and basic curative care.” A comprehensive and system-based approach to development is commonly recommended for the implementation of PHC. However, due to increased interest in controlling or eradicating specific diseases or health problems that have had a large impact on populations, many funding organizations have focused instead on a program-based approach to health problem solving.

Management approaches based on programs or projects have been identified as very effective in addressing specific and well-defined health problems. These kinds of approaches offer the opportunity to focus scarce resources on priority areas of a particular country’s health programs. Such emphasis on well-defined programs allows managers to be more consistent in targeting relevant interventions to major public health problems; in turn, those interventions are more effective in achieving desired outcomes. This vertical program design approach has also been used to control health problems and to address such health needs as immunization, tuberculosis treatment and control, HIV/AIDS/STI prevention and control, and the implementation of family planning programs.

Within the context of PHC, there is a recognition that program- or project development-centered management approaches are the most widely used PHC strategies. The concepts “program” and “project” are closely interrelated and share the same key principles: a clear definition of the goals and objectives to be achieved and a well-specified target population. Without these key principles, it would be nearly impossible to properly monitor the implementation of PHC activities.

**PROGRAM** can also be defined as a collection of activities that a given public or private sector organization implements in pursuit of fairly long-term objectives.

**Example:** The Democratic Republic of the Congo’s (DR Congo’s) Expanded Program of Immunization (EPI)

**PROJECT**, on the other hand, is defined as a set or cluster of activities with specific objectives that contribute to the overall objectives of the institution. These objectives should be achieved within a five-year activity set.

**Example:** SANRU III Project

**The strengths and weaknesses of the management approach based on specific programs include:**

- ❖ The program approach to health problem solving is mainly used when more focus and be more precise control are desired to improve upon or eradicate a specific health problem with the highest degree of effectiveness.
- ❖ This approach is nevertheless criticized for the its potential to undermine the system as a whole and for its tendency to favor the design and implementation of the interventions in a vertical manner, which then become inefficient.

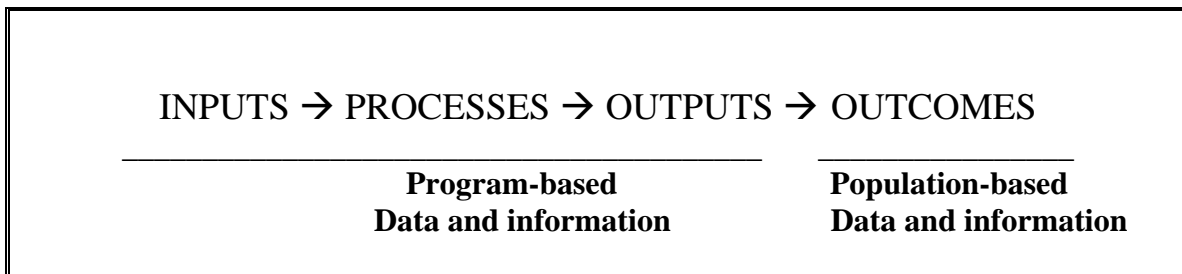
**The commonalities between program and project include:**

- Well-defined goal and objectives
- Clearly stated strategy or approach
- Specific interventions to implement
- Well-defined set of interrelated activities
- Clearly specified indicators
- Monitoring and evaluation (M&E) system
- A detailed workplan or action plan
- A detailed budget

PHC services in many developing countries in Africa have been conceived through a specific program that can be monitored. Examples of some of those PHC programs include EPI, MCH/FP, and HIV/AIDS/STI prevention and control.

## MONITORING OF PROGRAM COMPONENTS

**Figure 1: Relationship between program components**



**The components of a program are defined as follows:**

- (a) **Inputs:** Refers to all types of resources (i.e. personnel, facilities, space, equipment and supplies, information) to support the implementation of a program. Inputs are concerned with the mobilization phase.
- (b) **Processes:** Refers to a set of activities which combine the different resources in which program inputs are utilized in pursuit of the results expected from the program. Program processes include all the service delivery operations (management, training, commodities and logistics, IEC, research and evaluation that the program carries out to deliver services). Processes are the transformation phase.
- (c) **Outputs** are the immediate or direct results obtained at the end of the process through the execution of activities using program resources. There are three types of program outputs:
- Enabling area outputs, such as facilities rehabilitated, type and quantity of commodities allocated, the number of persons trained, number of IEC sessions carried out at a fixed or outreach facilities
  - Service outputs, such as number of clients informed and sensitized, number of users, number of target group accessing to services and quality of care, number of children vaccinated/immunized, number of new acceptors of family planning methods, couple-years of protection (CYP), contraceptive prevalence (CPR)).
- (d) **Outcomes** are the set of effects of the results encountered that are expected to occur at the population level due to program activities and the generation of program outputs. These may be divided in two components:
- **Intermediate outcomes:** effects at the population level that are closely linked to program activities and program level results.
  - *Examples:* contraceptive use that led to longer birth spacing, client satisfaction, higher coverage of the target population. This type of change might occur within two to five years.

- **Long-term outcomes (impact):** refers to the results at the population level that are long-term in nature and are produced through the action of intermediate outcomes.
- *Examples:* Changes in attitude and practices within the communities, reduction in the fertility rate of the target population, and improved health status of mothers and children (including morbidity and mortality reduction) who live in the target areas.

In summary, the functioning of a program requires the availability of inputs to support the implementation of program activities. Processes that are established within a project or a program facilitate project implementation and they generate program outputs. The results that are expected from effective implementation of program activities will lead to population level outcomes.

## B. Introduction to PMI Concepts & Principles

### **Context:**

Performance measurement is the quantitative assessment of health care processes and outcomes for which the individual practitioner or provider organization may be accountable; it plays a critical role in today's environment, as characterized by growing demands for accountability.

PMI is a synergistic combination of various methods and techniques directed towards improving the service delivery process, with the ultimate goal of achieving the highest health coverage in target populations.

- In general, PMI is a management tool that can be applied at the local level of a health facility to increase program coverage through continuous management and surveillance by trained and responsible personnel.
- 
- Program monitoring will ensure that:
  - (a) The program continues to progress to achieve its objectives
  - (b) It contributes to the identification of problems and facilitates the formulation of solutions that can be applied at the local level
  - (c) It is interested in problems that relate to the functioning of services rather than in epidemiological impact on the community

As indicated in Table 1 below, there are different types of evaluation tools, each with a different purpose.

For example, in designing a monitoring and evaluation strategy, the evaluator (i.e., the program manager or supervisor) needs to identify the key question(s) that he or she wishes to answer, and thus decide on the type of evaluation that would be most appropriate to address the question.

It should also be noted that within the context of USAID-assisted health development programs, there are plans for monitoring and evaluation activities that include the mid-

term and the end-of -project evaluation of projects or programs. These types of evaluations are usually designed to address specific issues or problems encountered during project implementation, and they are also structured to satisfy the organizers or the funding organizations' interest and objectives.

The monitoring approach, as used in PHC, focuses mainly on the measurement of PHC services coverage, and moves from resource availability up to the individual and social benefits assessment.

**Table 1: Types of evaluation processes**

TYPE OF EVALUATION PROCESS	QUESTION(S) ADDRESSED
<b>Needs assessment</b>	What should the program include and how can it best be delivered to meet the needs of the target population?
<b>PMI</b>	<p><b>Inputs:</b> Were inputs (e.g. vehicles, equipment, medicines/contraceptives, materials, and personnel) made available to the program in the quantities and at the times specified in the work plan?</p> <p><b>Process:</b> Were the scheduled activities carried out as planned? How well were they carried out?</p> <p><b>Outputs:</b> Did the expected changes occur at the program level, in terms of:</p> <ul style="list-style-type: none"> <li>- access to services</li> <li>- quality of care</li> <li>- service utilization</li> </ul> <p><b>Outcomes:</b> Did the expected changes occur at the population level?</p> <p><b>Costs consideration:</b> What was the incremental cost of:</p> <ul style="list-style-type: none"> <li>- expanding an activity</li> <li>- producing a higher unit of output</li> <li>- achieving the change that occurred</li> </ul>
<b>Impact assessment</b>	What and how much change occurred (at the program or population level) that is attributable to the program?

### C. Defining the Primary Purpose of PM

One of the prevailing challenges for successful implementation of PHC services is the persistent lack of a systematic approach to continuously measure and improve the performance of health facilities at the district (or operational) level.

Due to the growing demand for accountability in today's market-oriented society, performance measurement has become an essential mechanism through which one can verify progress with planned activities to achieve goals and objectives.

### Defining PMI

There is no single universal definition for “**performance monitoring**” that everyone can agree on, but it is sometimes described as “*a mechanism through which program managers, supervisors, and service providers track changes that take place within the implementation of a program and carry out analyses that enable them to make informed decision about ongoing and future program activities to meet its objectives.*”

- The monitoring of activities that relate to program-level variables (or indicators) is also called **process evaluation**.
- Monitoring relates to a varied set of evaluation techniques, all of which measure some aspects of program performance.

### The purpose of PMI is twofold:

- To improve programs by identifying those aspects that are working according to plan and those that are in need of mid-course corrections; and
- To track changes in the services provided (service outputs) and the desired results.

**Table 2: Purpose of monitoring and components of interest**

Purpose of program monitoring	Components to measure
Improving the program	<p><b>PHC programs (e.g. EPI, family planning services):</b></p> <p>(a) Functional outputs: (i.e., number &amp; quality of activities conducted in different areas of management/supervision, training, commodities/logistics, IEC, record keeping)</p> <p>(b) Service outputs: (i.e., access to service, quality of care, and program image).</p>
Tracking the results	<p><b>Service utilization:</b> With regard to family planning services, one would look into the results produced at the program level (e.g., number of acceptors, number of visits, CYP, etc.)</p> <p><b>Outcomes:</b> intermediate or long-term changes at the population level (e.g., contraceptive prevalence, median interval between births)</p>

## D. Advantages and Limitations of PMI

PMI offers many advantages:

- It is timely and can be applied to ongoing project activities without major constraints to funding and logistical support
- It serves as a management tool that identifies weaknesses in the program and allows health managers to take timely action that can redress the course of the program
- It provides viable information on the functioning of district-based programs

However, PMI also has some limitations:

- It requires the availability of a structured program or project with components that can be measured
- It requires program- and population-based reliable sources of data and information
- It requires the establishment of measurable indicators and valid measurable quality/criteria

## E. Practical Aspects of PMI

When carrying out PMI, it is important to note the following:

- Ideally, performance monitoring employs both quantitative and qualitative techniques.
- It is not practical to attempt a detailed monitoring & evaluation of all aspects of a program. Rather, it is important to prioritize those aspects of the program for which the information will be most useful to the organization and crucial to the success of the program itself.
- Monitoring & evaluation activities are generally staggered. Some may be done routinely (e.g., collection and reporting of service statistics), others on periodic basis (e.g., monthly/quarterly reports of progress, simulated client survey to assess quality of care), and others as a one-time exercise (e.g., analysis of cost per CYP for different contraceptive methods).

### ❖ **Monitoring includes measuring the current status and change over time in any of the program components:**

At the program level:

- Inputs (Financial, personnel, materials, and equipment resources)
- Outputs: This in turn refers to functional outputs, service outputs or service adequacy, and service utilization.

At the population level:

- Outcomes:
  - For a family planning program, for example, the intermediate outcomes (e.g., contraceptive prevalence) and long-term outcomes (e.g., total fertility rate)

**Table 3: Using the conceptual framework to identify issues to address in PMI**

<b>PROGRAM COMPONENT</b>	<b>QUANTITY OF COMPONENT</b>	<b>QUALITY OF COMPONENT</b>	<b>COST OF COMPONENT</b>
<b>INPUTS</b>	What types & level of resources were allocated to this intervention?	Were qualified personnel available to implement activities?	What was the unit cost & the total cost of each resource? The cost of the program?
<b>OUTPUTS:</b> Functional areas (e.g., training)	How many persons were trained, by category of personnel?	Were trained staff able to perform tasks competently 6 months following training?	What was the cost per participant-day of training?
<b>OUTPUTS:</b> Service outputs	<b>Access:</b> Did the number of service delivery points (SDPs) or health units providing service increase?	<b>Quality:</b> Did the quality of care improve over time?	What was the added cost of increasing the numbers of SDPs/health units of improving the quality of care?
<b>OUTPUTS:</b> Service utilization	Did the number of new acceptors or CYP increase over time?	Has percent of clients returning for follow-up appointments increase?	What was the added cost associated with the increase in new acceptors with the increase in CYP?
<b>OUTCOME:</b> Intermediate outcomes	Was there a change in the key behavior (e.g., contraceptive prevalence) among the target population?	Was there a change in the key behavior (e.g., use of condoms with non-regular sexual partner, use of quality services at SDP) in the target population?	What was the increase in costs associated with the change in contraceptive prevalence?
<b>OUTCOME:</b> Long-term outcomes	Did fertility rates change over time?	Did women achieve their reproductive health intentions?	What was the cost of achieving the fertility change?

❖ **The following facts should be kept in mind when dealing with family planning programs:**

- Program monitoring is far more common than impact assessment in evaluating national family planning programs' performance.
- At the program level, managers use the trends in program data (e.g., number of new acceptors/clients, volume of CYP, number of clinic visits by purpose of visit, number of contacts with adolescents) as a means of assessing progress and identifying areas in need of improvement.
- Also at the program level, managers track population-level trends over time (in CPR, method mix, total fertility rate, median length of birth intervals, etc.) to assess progress toward intermediate and long-term objectives.
- In general, although monitoring of outputs and outcomes does not in itself demonstrate cause and effect, there is often an assumption of plausible association.

## **F. Health Service Measurement Techniques (Coverage)**

### **(1) Background**

As defined by Tanahashi in 1978,

*“...health service coverage is a concept that expresses the extent of interaction between the service and the people for whom it is intended; this interaction is not being limited to a particular aspect of service provision, but ranging over the whole process from resource allocation to the achievement of desired objectives.”*

The functioning of health services is measured through the understanding and the application of the concept entitled “**coverage**.”

**Definition:** A **coverage measure** is a ratio between the number of people for whom the desired conditions are met and the number of people targeted for a given service.

Its evaluation enables management to identify bottlenecks in the operation of the service, to analyze the constraining factors responsible for those bottlenecks, and to select effective measures for service development (Tanahashi, T., 1978).

Health service coverage depends on the ability of a health service to interact with the people who should benefit from it, otherwise known as the **target population**.

The phrase “target population” designates a specific population group that benefits from a specific program activity. (Examples of target groups: the under-five year olds, children between the age of 0 – 11 months, and women of reproductive age 14 – 49 years of age).

### **Why health service coverage?**

- There have been multiple unsuccessful efforts in measuring morbidity and mortality to evaluate the impact of PHC programs in less developed countries (LDC).
- Evaluation at the end of programs has failed to properly address the improvement of program implementation and effectiveness issues.
- These types of evaluation processes do not address the fundamental issues in the management of PHC activities at the operational level.

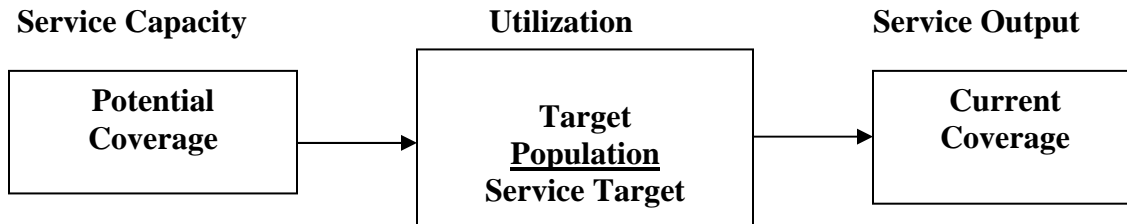
### **○ Principles and methodology of health coverage measurement**

As stated by Tanahashi:

*“Health service coverage focuses on the people for whom the service has satisfied certain criteria regarding its defined objective, and compares their number with the target population.”*  
(Tanahashi, T., WHO, 1978)

## (2) Model of Health Service Coverage

**Figure 2: Schematic Model of Health Service Coverage and its utilization**  
(from Tanahashi, 1978)



- Health coverage monitoring aims to provide managers at the operational level with essential information regarding all aspects of the process by which the PHC programs or activities are being implemented.
- Tanahashi, looking at the process from the point of view of *service provision*, has identified five important indicators that lead to the definition of health coverage measurements.

## (3) Indicators of Health Service Coverage Measurements

Within PHC systems, there are five basic service coverage measurements that include:

- **Effective coverage:** people who receive effective care
- **Adequate coverage:** people who receive adequate care
- **Utilization (contact) coverage:** people who utilize the service at least once
- **Accessibility coverage:** people who can access to the service
- **Availability coverage:** people for whom the service is available

The above service coverage measurements are also defined as follows:

- (a) **Effective coverage:** Ratio between the target population that has adequate coverage with respect to all the technical and quality requirements regarding the provision of the service and the target population that has adequate coverage. From the example above, it will be the children with adequate coverage, and with vaccines well-preserved in correct temperatures (4 °C, 8 °C) and given with an appropriate vaccination technique. That is to say, those children which are supposed to be immunized against diseases for which they are vaccinated. This also means service effectiveness.
- (b) **Adequate coverage:** Ratio between the target population that has received all services or aspects of a given service with respect to the

technical norms and the target population that has at least once contacted or utilized the service.

**(c) Utilization (Contact)**

**Coverage:**

Ratio between the target population who contacted or utilized the service at least once and the total target population who should utilize it by service.

**(d) Accessibility coverage:** Ratio between the target population living within reasonable reach (5 km/1hour walk) from the service location and the total target population who should benefit from the service.

**(e) Availability coverage:** Ratio between the real capacities of the service related to the availability of needed resources to provide a given service and the total target population. The real capacity of a health facility expresses the amount of service that can be made available to the target population and dictates the number of people who can receive the service.

**(4) Measurement in Practice**

Two types of measurements that are under consideration when measuring health services coverage are:

**1. Measurement of the service target population**

This can be obtained from a census or a focused survey. For prevention-oriented interventions, the service target population is determined by the demographic characteristics of the population, and the unit of measurement is also demographic, such as by person or by household.

**2. Measurement of the service provision**

This is done for each of the five steps (or indicators) discussed above for which the information can be collected from the records of the service deliveries. If needed information is not relevant, a pilot study or research may be undertaken to obtain it.

**(5) Description of Services Whose Coverage Can Be Measured**

The service whose coverage can be measured must be described in observable or measurable terms. The description of the services must include the following elements:

- Service objective
- Target population
- Essential resources required to provide it

- The amount of essential resources
- The unit of service required
- Measures of the performance of the service
- Criteria for satisfactory performance of the service

## **(6) Identification of Service Bottlenecks (T. Tanahashi Method)**

The stages in service provision have been identified in such a way that certain inequalities exist between them. A large difference between an adjacent pair of coverage measurements implies that for a significant proportion of the target population, the service is failing to meet the requirements for programs in service provision. This indicates the existence of problems or bottlenecks in the service provision.

## **(7) Analysis of Constraints**

Bottlenecks demonstrate where the difficulty in service provision lies, but they do not pinpoint the factor accountable for the poor coverage. Therefore, relevant information is required to properly analyze all aspects related to the provision and utilization of the service by the target population. Health personnel as well as the users of services can facilitate the identification of bottlenecks.

## **(8) Cost Effectiveness for Service Development**

As stated by Tanahashi, once the factors constraining service development become known, proper remedial action needs to be taken. A cost-effective analysis must be completed before deciding upon the necessary action for solving the identified problem.

Each of the interventions potentially capable of solving the bottleneck has to be analyzed in terms of its cost and effectiveness, and then the most cost-effective method should be selected.

It is clear that health service coverage measurement has many advantages when applied at the implementation phase of PHC programs. Indeed, it requires a good information system, whose creation or improvement can be seen as part of the application approach.

In Senegal, it was decided to fully integrate the health coverage measurement as the principal component of the monitoring process utilized within the Bamako Initiative Strategy.

### III. METHODOLOGY

#### A. Planning for PMI Process

❖ **Preliminary activities or actions that contribute to planning for PMI activities include:**

- Ensuring that planning meetings have already taken place with local health officials, health workers, and members of the health committees in advance of program monitoring
- Ensuring availability of demographic data for the catchment area and facility to be monitored
- Preparing the necessary management tools for the assessment (example: register for newborn visits, register for prenatal visits, register for family planning services, register for primary curative services, register for daily distribution of drugs, updated stock cards for the logistics of contraceptives and essential drugs, etc.).

❖ **Specific steps in the planning process**

With regard to project implementation process, the first step in planning a monitoring and evaluation (M&E) of a program activity is the development of a scope of work. The scope of the evaluation process should enable the evaluator to decide on whether to monitor only program performance, to measure only the impact of the program, or to do both.

If the decision is made to **perform a program monitoring exercise**, the next steps in the development of an evaluation plan are delineated in the following section.

#### B. Methodological Approach to PMI

##### 1) Clarify the primary purpose of PMI

As indicated in the preceding sections, PMI has two main purposes:

1. To improve program by identifying those aspects that are working according to plan and those that are in need of mid-course corrections
  - a. Example: to enhance quality of care, as a number of countries have in experimenting with the adoption of “Client-Oriented Provider-Efficient” technique
2. To track and demonstrate results at the program or population level
  - a. Example: data are not aggregated but are rather analyzed by service providers to identify local-level changes that can address problems identified by the exercise

## 2) Select activities to be monitored

The activities to be monitored must be carefully selected based on their potential impact on the identified priority health problems. In most developing countries, the priority health problems are all related to maternal and child health. A mistake to avoid when using PMI is to try to monitor all activities. It is necessary to select activities that most ably address the target priority problems, and the activities for which norms and standards have been developed and used in training the providers.

The following are examples selected in this context that can be measured:

- Primary Curative Care consultation (PCC)
- Prenatal Care consultation (PNC)
- Expanded Program of Immunization (EPI)
- Family planning services

## 3) Define relevant indicators

### a. Defining the indicator

*An indicator is a single measure summarizing a group of statistics that allow to appreciate a global state of a system or a situation*  
(OMS Serial HFA n° 4 – 1981)

Indicators as used in this monitoring approach are variables that measure the different aspects of a given program, such as the inputs, process, outputs, and outcomes.

An indicator can be assigned a numeric value (i.e., percentage, a mean value, a ranking, an absolute number, or a Yes or No)

- It should be noted that PMI consists of measuring how well the program is doing in one or more of the boxes presented in Table 3.
- Program monitoring quantifies what actually occurs at each level (of inputs, processes, outputs, and outcomes).
- For a given evaluation, one should prioritize indicators based on specific program objectives and select a manageable set of indicators that satisfy the evaluation objectives.
- In short, it is essential to identify the key question(s) being addressed in a particular evaluation and then select the indicators accordingly.

### b. Characteristics of good indicators

- **Valid:** The indicator measures what it is supposed to measure.
- **Reliable:** The value remains the same regardless of repeated measurement.
- **Relevant:** It is relevant to the overall objectives of the project. It has direct implications for decision makers. It is meaningful and interesting to a broader audience.
- **Precise:** The indicator is clearly and unambiguously defined.
- **Sensitive:** It reflects changes in state of the phenomenon under study.

- **Timely:** It is available on a regular basis and without undue delay.
- **Defined in clear, precise terms:** The indicator must be operationally defined so that others can know precisely what is being measured. Example: “family planning acceptor.”
- **Comparable across different population groups and program approaches:** Example: all things being equal, one would choose a CPR based on women aged 15-49, rather than on women aged 15-44, because earlier figures would be most comparable to rates from other programs.
- Indicators should be non-directional in nature: Example, a percentage of SDPs that encountered a stock-out during the past 6 months, which can be tracked over time, is a good indicator, as opposed to a decrease in the percentage of SDPs that had a stock-out.
- **Cost:** The cost of data collection using the indicator is manageable. The performance indicator can be put together from easily available data.

**c. Factors that affect the selection of indicators**

- Availability of data needed to measure the indicator
- Amount of time allocated for the evaluation exercise
- Financial support available for the evaluation
- Donor agency requirements. Example: CYP has become the most widely used measure of service utilization in USAID-funded programs, because USAID (as well as the International Planned Parenthood Federation) require recipient agencies to report this particular result.

**d. Use of multiple indicators**

In countries where the quality of management information system (MIS) data is suspect, it is advisable to use two or more well-established indicators, such as total fertility rate (TFR) and CPR for family planning programs, to measure given results, rather than use one indicator.

**4) Identify and define the target population**

With regard to the EPI and safe motherhood program activities, most health workers (managers, supervisors, and nurses) have used the following population groups when planning and reporting data on EPI-related activities:

- Children aged 0 – 11 months of age
- The under-five years old population group
- Women of reproductive age (14 – 49 years of age)

**5) Identify source of data**

The most common sources of data being measured, particularly for family planning and EPI programs, are population-based and program-based data. However, when multiple sources of data exist, one would need to consider those options as well.

## 6) Planning for data collection procedures

During the planning phase of PMI, the following steps should be taken:

- Select the most appropriate period to carry out PMI activities in consultation with health officials and the local partners
- Decide on the duration of the monitoring exercise in consultation with partners
- Establish a theoretical number of children aged 0-11 months in the catchment area
- Establish a theoretical number of expected pregnancies in the year
- Establish a theoretical number of potential family planning clients (women of reproductive age 15-49 years)

## 7) Data analysis and presentation

Deciding on the format for presenting the results of PMI before monitoring is carried out is important for the following reasons:

- It allows the monitoring team to map out how the information will be processed and presented well in advance of the data collection phase.
- It organizes the PMI process and makes it more efficient, thereby allowing the monitoring team to have a general idea about what is needed and expected for the PMI process.

## 8) Microplanning & how to address the bottlenecks

Microplanning consists of strategies selected at the field level to resolve problems that have been identified during PMI.

Through the use of the microplanning process and with support from health workers from higher levels, members of health committees, and health managers, the team can do the following:

- Divide the tasks to be carried out among members of the committee at the health unit (based on their ability and their availability to carry out the prescribed tasks).
- Establish a calendar of activities for the next six months concerning the next PMI.
- For each activity, describe the tasks which require follow-up in chronological order.
- Determine the necessary resources and identify a source for those resources so that recommended activities can be carried out without constraints.

Some of the activities that would be used during the review, data analysis, and the micro-planning process include:

**a) Monitoring curve:** Once data has been collected and rates calculated, the next step is to draw the monitoring curve from those results using the grid that has been provided in annex of the manual. The grid allows the presentation of rates in percentage that have been achieved for each of the selected indicators and the target population.

**b) Identification of service bottlenecks:** This refers to stages in service provision in which inequalities are demonstrated. A large difference between an adjacent pair of coverage measurements implies that, for a significant proportion of the target population, the service is failing to meet the requirements of programs for service provision. This indicates the existence of problems or bottlenecks in service provision.

**c) Analysis of constraints:** Bottlenecks demonstrate where difficulties in service provision lie, but they do not pinpoint the factor accountable for the poor coverage. Therefore, relevant information is required to properly analyze all aspects related to provision and utilization of service by the target population. Health personnel, as well as the users of the facilities, can facilitate the identification of the bottlenecks.

**d) Planning for corrective measures** (refer to grid that has been provided in annex): Based on the identified bottleneck, the low geographic coverage, and/or the poor quality of the services, an action plan needs to be developed to answer the following questions:

- What should be done?
- How should it be done?
- Where?
- When?
- Who should do it?
- With whom?
- With what resources?
- What are the potential constraints?

**e) Cost effectiveness for service development:** Once factors constraining services have been identified, proper actions should be taken to address the problems. A cost effectiveness analysis or an identification of the best or most promising practices *must be done* before deciding on the necessary action for solving the identified problem.

Each of the interventions capable of resolving the bottleneck has to be analyzed in terms of its cost-effectiveness.

### **C. Summary of Key Steps for Implementing PMI of PHC Activities**

- Select the monitoring team and allocate tasks to each member
- Determine the target population for each activity
- Identify and assess sources of data to be utilized
- Obtain a list of personnel for each facility
- Perform the sampling and data collection using a systematic sampling method to cover the entire period
- Fill out the monitoring results grids
- Draw the curve of the results
- Analyze and determine the factors of bottleneck identified using the Performance Monitoring & Improvements for PHC (PMIP) services grid
- Compare the previous performance to the actual performance for each activity
- Carry out planning for the corrective measure to be applied
- Carry out budgeting for the next six months

## IV. MONITORING OF FINANCIAL RESOURCES AT PRIMARY FACILITY LEVEL

### A. Background

Since the introduction of PHC in many developing countries, many factors and constraints have contributed to the non-achievement of the “**health for all by the year 2000**” objective, including:

- a) Weakness of political commitment to better health, which has contributed to low and insignificant public sector investment in the health sector
- b) War and political instabilities
- c) Lack of financial and human resources capable of managing developing health care systems

This section of the manual discusses the need for improved financial management at district-based health facilities. Without an acceptable level of accountability and financial management, most of the district-based health facilities will not succeed with the implementation of PHC activities.

Through ownership of programs by the MOH and individual communities, programs such as EPI are being sustained, but much remains to be done in improved logistics regarding vaccines, the cold chain system, and contraceptives commodities. Financial sustainability could not be achieved without adequate funding of programs and increased management capacity to support the implementation of developing countries' programs.

Studies carried out in DR Congo under the SANRU III project have shown that alternative financing is available to support the implementation of PHC activities and should include the communities that are being served. As indicated in Table 4, it has been proven that, when properly designed and implemented, health care financing schemes involving catchment area communities can ensure coverage of selected operating and investment costs.

**Table 4: Community financing capacity to cover selected operating and investment costs**

Categories	At community level	At Health Center level	At the Health Zone level	At the Regional level
Medicines & supplies	Excellent	Excellent	Good	Very Poor
Functioning/operating costs	Excellent	Excellent	Poor	Very poor
Personnel	Excellent	Excellent	Poor	Very poor
Monitoring & Supervision costs	Excellent	Excellent	Poor	Very poor
Continuing education/training	Good	Good	Very poor	Very poor
Building investment	Good	Good	Very poor	Very poor
Equipment	Good	Poor	Very poor	Very poor
Depreciation	Good	Poor	Very poor	Very poor

**Source: Baer, F. & Associates, SANRU Project, 1987, health care financing studies**

## B. Objectives

The objectives for monitoring financial resources at primary level facility (health center/health posts) are:

- 1) To identify the financial situation of the health center by defining operating costs, including an analysis of expenditures and receipts
- 2) To measure financial viability through the use of financial indicators
- 3) To develop a budget with available resources to facilitate the achievement of results.

## C. Financial Analysis

Some of the recommended steps in the financial analysis of a health center include:

- 1) Inventory the expenditures and receipts for the health center operations
- 2) Develop a financial statement (balance sheet) for the health center
- 3) Determine the viability of health center operations through calculation of the recovery rate

## D. Practical Approaches to Financial Monitoring

The financial monitoring exercise included in this manual is designed to analyze the financial resources mobilized through the sale of drugs, contraceptives methods, and other services, and the cost of these services at a health facility level.

This exercise must be completed for each priority component (activity) to be monitored, as well as for the entire health facility. The indicators used in this exercise refer to the following:

- a) Income generated by each activity and by the entire facility from all sources, including donations, during the six-month period covered by PMI
- b) The level of expenditure for each priority activity and for the entire facility, including the personnel
- c) The marginal benefit of loss generated/created by each activity and by the entire facility for the six-months period covered by PMI

The results, including the comparison of the figures, will allow program managers to evaluate the likelihood of sustaining the activities with or without external financial support.

The examples of analytical tools used are as follows:

### 1) Cost of medicines (example)

#	Description	Quantity	Unit Cost	Total Cost
1.	Acetylsalicylic acid 500mg tablet, 1000 tablets/bottle	2 Bottles	\$35.00	\$70.00
2.	Acetaminophen 500mg tablet, 1000 tablets/bottle	5 Bottles	\$40.00	\$200.00
3.	Acetaminophen syrup, 250mg/5ml, 50ml bottle, 10 bottles/box	10 Boxes	\$65.00	\$650.00
4.	Amoxicillin 500mg capsule, 1000 capsules/bottle	5 Bottles	\$85.00	\$425.00
	<b>TOTAL</b>			<b>\$1,345.00</b>

### 2) Management tools/supplies cost (example)

#	Description	Quantity	Unit Cost	Total Cost
1.	Register for curative consultation	2	\$10.00	\$20.00
2.	Register for prenatal consultation	2	\$10.00	\$20.00
3.	Register for deliveries	1	\$5.00	\$5.00
4.	Prescription pads	6	\$4.50	\$27.00
5.	Laboratory request form (pads)	2	\$5.00	\$10.00
6.	Stock cards (100/box)	2 boxes	\$12.00	\$24.00
	<b>TOTAL</b>			<b>\$106.00</b>

### 3) Personnel-related costs (example)

#	Description	Monthly Salary	# of Months	Total Cost
1.	Nurses (Receptionist/Triage)	\$600.00	3	\$1,800.00
2.	Public Health Nurse	\$300.00	3	\$900.00
3.	Laboratory Assistant	\$200.00	3	\$600.00
4.	Maintenance/Housekeeping	\$200.00	3	\$600.00
	TOTAL			\$3,900.00

### 4) Other operating costs (example)

#	Description	January	February	March	Total Cost
1.	Utilities (Electricity & Water)	\$25.00	\$26.00	\$25.50	\$76.50
2.	Transport/Transportation	\$50.00	\$55.50	\$40.00	\$145.50
3.	Rent for Facility	\$200.00	\$200.00	\$200.00	\$600.00
4.					
	TOTAL				\$822.00

### 5) Summary table of health center costs (example)

#	Description/Category	Total cost per quarter
1.	Medicines	1,345.00
2.	Management Tools (Office Supplies)	106.00
3.	Personnel-Related cost	3,900.00
3.	Operating Cost	822.00
	TOTAL	\$6,173.00

### 6) Summary table of revenues (receipts)

#	Category	January	February	March	Total
1.	Primary Care Consultations	\$450.00	\$380.00	\$500.00	\$1,330.00
2.	Prenatal Consultations	\$350.00	\$400.00	\$500.00	\$1,250.00
3.	Deliveries	\$400.00	\$450.00	\$350.00	\$1,200.00
4.	Medicines	\$850.00	\$900.00	\$1,500.00	\$3,250.00
5.	Other contributions	\$100.00	\$100.00	\$100.00	\$300.00
	TOTAL				\$7,330.00

### 7) Summary table of calculated number of cases

#	Type of consultation	Number of cases
1.	Curative consultations (adults)	140
2.	Curative consultations (pediatrics)	160
3.	Prenatal consultations	150
4.	Deliveries	100
	TOTAL	550

## E. Calculation of Financial Indicators

Once data for total operating costs and revenues of a health center are obtained, one can proceed with the calculation of the following indicators:

### Generic examples:

$$\text{a) Mean revenue (receipt) per case} = \frac{\text{Total Receipts}}{\text{Number of cases}} = \$13.33/\text{Case}$$

$$\text{b) Mean cost per case} = \frac{\text{Total Cost}}{\text{Number of cases}} = \$11.22/\text{Case}$$

$$\text{c) Recovery Rate}$$

$$\text{Recovery Rate} = \frac{\text{Mean Receipt/Case}}{\text{Mean Cost/Case}}$$

$$\text{Recovery Rate (RR)} = \$13.33/11.22 = 1.18$$

$$\text{d) Analysis}$$

- If recovery rate is  $< 1$   $\Rightarrow$  there is a deficit with a requirement to reduce cost or expenditures.
- If the recovery rate is  $= 1$   $\Rightarrow$  the facility and its operations are viable, therefore one should work on increasing the performance of the enterprise to maximize revenues.
- If the recovery rate is  $> 1$  (or recovery rate  $= 2.5$ )  $\Rightarrow$  the facility has auto-financing capacity.

## F. Budgeting

Any PHC program or component that is designed for implementation requires a budget. Budgeting depends on the scope of the program or project that is being designed. The budget includes several elements, including salaries, office equipment and supplies, medicines, etc.

### 1) Definition

Budgeting is defined as the planning process for expenditures and revenues (receipt) that relate to a specific period of time (month, quarter, or a year).

## **2) Budget Control**

An exercise that serves to:

- Check on the difference between the real and the planned budget
- Inform higher-level officials about the above differences
- Take corrective actions when there is a significant gap between the planned and the actual expenditures of a program

The proper use of this manual, either for training or for personal interest, would require a review of the tools in the annexes and eventual training, which highlights methods of using each component of this PMI guide. As stated in the introduction, this manual will guide managers toward achieving the best performance but cannot replace a manager's commitment and willingness to get the desired results.

# TRAINER'S GUIDE

## TRAINING GUIDELINES ON PERFORMANCE MONITORING & IMPROVEMENT OF PRIMARY HEALTH CARE SERVICES AT DISTRICT LEVEL

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## ACRONYMS

ACC	Accessibility Coverage
AC	Adequate Coverage
CC	Contact Coverage
EC	Effective Coverage
EPI	Expanded Program of Immunization
PCC	Primary Care Consultation
PHC	Primary Health Care
PMI	Performance Monitoring & Improvement
PNC	Prenatal Care Consultation
PSC	Preschool Consultation
HT	Handout
MCH	Maternal and Child Health
MDS	Managing Drug Supply
M&E	Monitoring and Evaluation
MOH	Ministry of Health
RSDP	Rural Services Development Partnership
RTI	Reproductive Tract Infection
SDP	Service Delivery Point
STIs	Sexually-Transmitted Infections
STG	Standard Treatment Guidelines
USAID	United States Agency for International Development
VA	Visual Aid

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## I. INTRODUCTION

This guide focuses on Performance Monitoring and Improvement (PMI) at primary-level facilities. It is designed primarily for training health program managers, supervisors, and health workers (nurses, and paramedical staff) who have responsibility for primary health care (PHC) service delivery at health center and health post levels. It is anticipated that the above categories of trainees already have background in the implementation of PHC activities, but additional management skills are still needed to maximize the achievement of results.

The guide is designed for a five-day intensive course, to minimize the time lost in service provision for training only. These five days includes morning and afternoon sessions, and has been developed with inputs from Advance Africa technical staff utilizing the existing state-of-the-art information on performance monitoring of programs that contribute to improved service delivery at health facilities and the community level.

The trainer's guide does not cover all issues related to PMI for PHC activities. The sessions presented in this guide can be expanded to suit additional training needs at provincial or district level for PMI in different settings. Due to the fact that every training situation is different and each training program must address specific needs, trainers that plan to use this manual are encouraged to first assess the learner needs and then adapt the sessions accordingly.

This guide provides a prototype evaluation instrument for the training itself, including the pre- and the post-tests that are provided at the end of the sessions. Daily sessions are followed by an evaluation exercise for the participants so that feedback can be provided for future improvement of the course. Daily review of each session, including reference materials, should also contribute to the learning process so that the trainers, resource persons, and health program coordinators can later teach and support the in-service practical learning process of nurses and paramedical personnel.

The number of trainees in this course should not exceed 25 people to allow interaction between participants and the trainers. The design of this trainer's guide is based on the principles of adult learning theory. The theory states that adults learn best when there is respect for what the learners already know, when learners are aware of how they could use the newly acquired skills and knowledge, and when their learning is directly related to their own life and work experience.

## II. GOAL AND OBJECTIVES

**Goal:** The overall goal of this trainer's guide is to increase the knowledge, skills, and awareness of PMI strategies among trainers, supervisors, and health providers (nurses and paramedical personnel).

By the end of the training sessions, it is expected that trainees will be enabled to conduct regular PMI within program activities at the district-based health facilities and communities they serve.

**Course objectives:** The overall objectives of this course are:

- 1) To increase the participants' knowledge and skills of PMI as a management approach to verify progress with planned PHC activities, and
- 2) To strengthen the participants' capacity to implement changes that might be required in an ongoing program to ensure attainment of program objectives.

### III. METHODOLOGY

This PMI trainer's guide is organized in sessions that build upon each other in terms of information, and are sequenced in logical presentation order to facilitate the learning process by participants.

Course materials are organized for short presentations followed by interactive discussions with participants. Each session of the course will have the following components:

<b>Title:</b>	Identifies the main topic of the session
<b>Objectives:</b>	Describes what the participants will be able to do by the end of the session to demonstrate increased knowledge and improved skills and attitudes
<b>Lesson Plan:</b>	Provides a breakdown of the session into sub-topics, including the time allocation for each sub-topic
<b>Materials:</b>	List of materials that will be required for the session as reference for participants and trainers
<b>Visual Aid/Handouts:</b>	Indicates handouts/visual aids on the lesson plan matrix that can be used to facilitate the training and the learning process
<b>Steps:</b>	Provides specific instructions for the trainer about how to conduct the session
<b>Tasks:</b>	These appear in the lesson plan matrix to advise the trainer about what the participants need to do during group or individual exercises
<b>Preparation:</b>	Indicates the arrangements that need to be made before training takes place, and also following the review of the daily sessions by trainers and course director so that future training activities can be improved
<b>Evaluation:</b>	This feedback mechanism for the trainers is designed to ensure that participants are gaining knowledge and skills from the course, and are satisfied with the training process so that they can serve as trainers for the other staff within their own primary-level facilities

## IV. COURSE OUTLINE AND SCHEDULE FOR TRAINERS

### DAY ONE

#### A. Lesson Plan One for Morning and Afternoon Sessions

##### 1. Objectives

By the end of the day's sessions, participants will be able to:

- (a) Identify the basic elements needed to ensure proper monitoring of a well-designed health program/project
- (b) Compare the PMI approach with other types of assessment/evaluation process
- (c) Define PMI and its different components
- (d) State the purpose of PMI
- (e) Describe the program components that can be monitored during project implementation

##### 2. Methods

- Short presentations
- Interactive discussions with participants for clarification (if needed)
- Class and small group exercise

##### 3. Course materials

- Flipchart paper pad and stand
- Tape (masking)
- Chalk (one small box)
- Markers
- Reference materials (PMI and training manuals)
- Folders containing writing pads, pen, pencil, eraser, and course schedule and reading materials (handouts).

##### 4. Course outline and schedule of activities

Time	Activity/Topics and Steps	Visual Aid/Handout
08:00 – 08:30	▪ Administration, registration, and set-up	Badges if necessary
08:30 – 09:00	▪ Words of welcome and opening ceremony by officials' representative & the training coordinator ▪ Ice breaker (introduction of participants and trainers) ▪ Lead trainer provides general introduction to the workshop, importance, activities and reviews the workshop schedule with participants ▪ Pre-test (no names of participants are required only code # to assist during the analysis of results)	

Time	Activity/Topics and Steps	Visual Aid/Handout
09:00 – 10:00	<ul style="list-style-type: none"> <li>▪ <b>INTRODUCTION: Programs/projects within the context of PHC</b></li> <li>▪ Review of the objectives, <i>Visual Aid 1</i></li> <li>▪ Introduce the PHC topic through a general overview with a special focus on program &amp; its components</li> <li>▪ Ask participants to differentiate between programs and projects, <i>Visual Aid 2</i></li> <li>▪ Ask participants to list basic elements of a program and of a project, and summarize with <i>Visual Aid 3</i> following interactive discussions with participants</li> <li>▪ Discuss program planning, monitoring, and controlling cycle as related to PMI concerns and agenda: <ul style="list-style-type: none"> <li>▪ <i>Planning</i>: develops objectives for project performance (time, cost, and quality)</li> <li>▪ <i>Monitoring</i>: identifies key factors to control from objectives and develops systems to collect information</li> <li>▪ <i>Control</i>: acts on the monitoring of data and information</li> </ul> </li> <li>▪ Summarize by using <i>Visual Aids 4, 5, and 6</i></li> <li>▪ Review program components and define each of the components (inputs, processes, outputs, and outcomes), <i>Visual Aid 7</i></li> </ul>	<p><i>Visual Aid 1</i>: Objectives</p> <p><i>Visual Aid 2</i>: Definition of relationship between program and project</p> <p><i>Visual Aid 3</i>: Basic design elements of a program and of a project</p> <p><i>Visual Aid 4</i>: Program planning, monitoring, and controlling cycle</p> <p><i>Visual Aid 5</i>: PMI purpose and process</p> <p><i>Visual Aid 6</i>: Project control purpose and process</p> <p><i>Visual Aid 7</i>: Definition of program components (inputs, processes, outputs, and outcomes)</p>
10:00 – 10:15	<b>COFFEE/TEA BREAK</b>	
	<p><b>PMI CONTEXT:</b></p> <ul style="list-style-type: none"> <li>▪ Ask participants: Why are managers and donor organizations concerned with PMI?</li> <li>▪ <i>Class exercise</i>: Invite participants to provide ideas/steps for planning an evaluation process</li> <li>▪ Ask what types of evaluation processes some of them have taken part in &amp; encourage interactive discussion</li> <li>▪ Ask trainees to identify the differences and similarities of previously encountered processes with the PMI approach</li> <li>▪ Summarize participants' contributions, <i>Visual Aid 9</i></li> <li>▪ <i>What is PMI, and what is the purpose of PMI?</i> Encourage participants to come up with suggestions before summarizing, <i>Visual Aids 10 &amp; 11</i></li> </ul>	<p><i>Visual Aid 8</i>: PMI context (statement)</p> <p><i>Visual Aid 9</i>: Present the types of evaluation process</p> <p><i>Visual Aid 10</i>: Define PMI</p> <p><i>Visual Aid 11</i>: Purpose of PMI</p>
10:15 – 11:30	<ul style="list-style-type: none"> <li>▪ <i>Review important issues</i> to be considered when planning and carrying out PMI, <i>Visual Aid 12</i></li> <li>▪ Continue discussion on this topic and encourage participants to ask questions requiring clarification</li> </ul>	<i>Visual Aid 12</i> : Issues to be considered when carrying out PMI
11:30 – 12:30	<ul style="list-style-type: none"> <li>▪ Present participants with <i>Visual Aid 13</i>, the conceptual framework used to identify issues to be address with PMI</li> <li>▪ Guide the participants through presentation of the contents of the table</li> <li>▪ Allow participants to ask questions and provide answers.</li> </ul>	<i>Visual Aid 13</i> : Present and discuss the content of <i>Table 3</i>
	<b>LUNCH BREAK</b>	
13:30 – 14:30	<ul style="list-style-type: none"> <li>▪ Continue discussion on the above topic (Use of the conceptual framework <i>Table 3</i> to identify issues to address in program monitoring</li> <li>▪ Guide the participants through the discussion of practical aspects of PMI, <i>Visual Aid 14</i></li> </ul>	<i>Visual Aid 14</i> : Practical aspects of PMI

<b>Time</b>	<b>Activity/Topics and Steps</b>	<b>Visual Aid/Handout</b>
14:30 – 15:30	<ul style="list-style-type: none"> <li>▪ Continue discussions on the practical aspects of PMI.</li> <li>▪ Summarize Day One activities and open the class for question and answer session</li> </ul>	
15:30 – 15:45	<b>COFFEE/TEA BREAK</b>	
15:45 – 16:00	<ul style="list-style-type: none"> <li>▪ Day one sessions evaluation by participants</li> </ul>	Trainers will prepare short questionnaire for the purpose
16:00 – 16:30	<ul style="list-style-type: none"> <li>▪ Trainers meet to review Day One sessions activities and prepare for Day Two activities</li> </ul>	

**Visual Aids**  
**for**  
**Day One Sessions**

## **VISUAL AID 1**

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### **Objectives:**

By the end of today's sessions, participants will be able to:

- (a) Identify basic elements needed to ensure the proper monitoring of a well-designed health program or project
- (b) Compare the Performance Monitoring and Improvement approach with other types of assessment/evaluation process
- (c) Define Performance Monitoring and Improvement (PMI) and its different components
- (d) State the purpose of PMI
- (e) Describe the program components that can be monitored during project implementation

## VISUAL AID 2

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### **PROGRAM**

**Definition:** A set of activities that a given public or private sector organization implements in pursuit of its fairly longer-term objectives

**Example of family planning program:** Defined as an organized set of activities designed to support and promote the delivery of family planning services in the public, private, and commercial sectors of a given country's health care system.

**Examples:** a Ministry of Health family planning program, an International Planned Parenthood Federation affiliate family planning program

### **PROGRAM OF AN INSTITUTION**

**Definition:** The collection of a set of activities that a given public or private sector organization implements in pursuit of its objectives.

**Examples:** Same as above

### **PROJECT WITHIN AN INSTITUTION**

**Definition:** A specific set or cluster of activities with specific objectives that contribute to the overall objectives of the institution.

### **CONCLUSIONS:**

- ❖ Programs and projects are closely related; they share the same structure containing:
  - Goals and objectives
  - Target population
  - Well-defined set of activities
- ❖ The set of multiple projects of a given institution may also collectively constitute the institutional program.

## **VISUAL AID 3**

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### **BASIC DESIGN ELEMENTS OF A PROGRAM OR A PROJECT**

- Goal
- Objectives
- Strategy or approach
- Interventions/Activities
- Indicators
- Monitoring and evaluation (M&E)
- Workplan/action plan
- Budget

## VISUAL AID 4

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### THE PROGRAM PLANNING, MONITORING, AND CONTROLLING CYCLE:

How do the elements of the cycle work?

- **Planning:** Develops objectives for project performance (time, cost, and quality factors are involved)
- **Monitoring:** Identifies key factors to control from objectives and develops system to collect information in order to continuously assess performance
- **Control:** Appreciates the level of compliance with the procedures, rules, norms, and standards using monitoring information

## **VISUAL AID 5**

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### **OTHER IMPORTANT CONSIDERATIONS FOR PLANNING PMI FOR A PROJECT/PROGRAM**

**PURPOSE:** Link project planning and control and gather data for project control (time, cost, and quality factors are involved)

**PROCESS:**

- (1) Identify key factors to control from plan
- (2) Establish performance criteria, standards and data collection methods for each factor
- (3) Identify information to be collected
- (4) Focus on output rather than on activity
- (5) Collect relevant information (not just data)
- (6) Relate report to project milestones

## **VISUAL AID 6**

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### **OTHER CONSIDERATIONS FOR PROJECT CONTROL**

**PURPOSE:** (1) Reduce differences between reality and plans  
(2) Manage resources for effectiveness

**PROCESS:**

**(1) Identify significant variances from plans by:**

- Continuous monitoring of plans (milestones)
- Periodic evaluation of progress against objectives

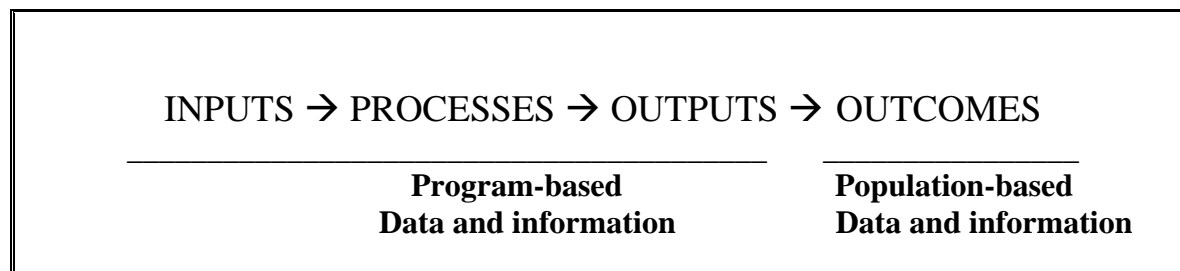
**(2) Regulate results by modification of activities and plans:**

- Crash activities (add more resources, reduce time)
- Reduce scope of plans/activities
- Modify project objectives (through revision of the detailed implementation plan and grant agreement)

## VISUAL AID 7

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### DEFINITION OF PROGRAM COMPONENTS



(1) **Program inputs:** a set of resources (i.e., personnel, facilities, space, equipment, and supplies) to support the implementation of a program

(2) **Program processes:** a set of activities in which program inputs are utilized in pursuit of the results expected from the program. Program processes include all the service delivery operations (management, training, commodities and logistics, IEC, research, and evaluation that the program carries out to deliver services).

(3) **Program outputs:** the results obtained at the program level through the execution of activities using program resources. There are three types of program outputs:

- Functional area outputs: (e.g., the number of persons trained, number of IEC sessions carried out at fixed or outreach facilities)
- Service outputs: (e.g., access to services and quality of care, number of children vaccinated)
- Service utilization: (e.g., number of new acceptors of family planning methods, couple years of protection (CYP)).

(4) **Program Outcomes:** the set of results expected to occur at the population level due to program activities and the generation of program outputs. These may be divided in two components:

- Intermediate outcomes (effects): the set of results at the population level that are closely linked to program activities and program level results
  - *Example:* contraceptive use by the target population. This type of change might occur within two to five years.
- Long-term outcomes (impact): the set of results at the population level that are long-term in nature and are produced through the action of intermediate outcomes
  - *Examples:* Reduction in the fertility rate in the target population and improved health status of mothers and children who live in the target areas

## **VISUAL AID 8**

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### **PMI CONTEXT**

**PMI – the quantitative assessment of health care processes and outcomes for which an individual practitioner or provider organization may be accountable – plays a critical role in today’s environment, characterized by growing demands for accountability.**

#### **❖ Justification for PMI:**

- Need to reinforce the PHC activities through integration and coordination of field-level activities**
- Increased commitment for the use of PMI as a decision-making tool**
- PMI is considered as a reliable and updated source of program performance information**
- Data collected through the traditional evaluation process were underutilized – and community participation in problem solving process has not been developed**

## VISUAL AID 9

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### TYPES OF EVALUATION PROCESS

TYPES OF EVALUATION PROCESS	QUESTION(S) ADDRESSED
<b>Needs assessment</b>	What should the program include and how can it best be delivered to meet the needs of the target population?
<b>Performance Monitoring and Improvement</b>	<p><b>Inputs:</b> Were inputs (e.g., vehicles, equipment, medicines/contraceptives, materials, and personnel) made available to the program in quantities and at the times specified in the workplan?</p> <p><b>Process:</b> Were the scheduled activities carried out as planned? How well were they carried out?</p> <p><b>Outputs:</b> Did the expected changes occur at the program level, in terms of:  <ul style="list-style-type: none"> <li>- access to services (out reach activities)</li> <li>- quality of care</li> <li>- service utilization</li> </ul> </p> <p><b>Outcomes:</b> Did the expected changes occur at the population level?</p> <p><b>Costs consideration:</b> What was the incremental cost of:  <ul style="list-style-type: none"> <li>- expanding an activity</li> <li>- producing a higher unit of output</li> <li>- achieving the change that occurred</li> </ul> </p>
<b>Impact assessment</b>	What and how much change occurred (at the program or population level) that is attributable to the program?

## VISUAL AID 10

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### DEFINING PERFORMANCE MONITORING AND IMPROVEMENT

What is Performance Monitoring and Improvement?

#### DEFINITION:

Performance Monitoring and Improvement (PMI) is a synergistic combination of various methods and techniques that are directed towards improving service delivery process to achieve the highest health coverage of the target populations.

#### BASIS OF PMI:

PMI strategy is based on health coverage measurement principles. As stated by World Health Organization (WHO):

*“Health service coverage focuses on the people for whom the service has satisfied certain criteria regarding its defined objective, and compares their number with the target population.”* (Tanahashi, T., WHO, 1978)

#### OTHER ASPECTS OF PMI:

- ❖ Monitoring of activities that relate to program-level variables (or indicators) is also known as “**process evaluation.**”
- ❖ Monitoring relates to a varied set of evaluation techniques, all of which measure some aspects of program performance.

## VISUAL AID 11

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### PURPOSE OF PMI:

The purpose of Performance Monitoring and Improvement is twofold:

- 1) To improve programs by identifying those aspects that are working according to plan and those that are in need of mid-course corrections
- 2) To track changes in the service provided (service outputs) and the desired results.

**Table 2: Purpose of PMI and components of interest**

<b>Purpose of PMI</b>	<b>Components to measure</b>
<b>Improving the program</b>	<b>Functional outputs:</b> number & quality of activities conducted in different areas of management/supervision, training, commodities/logistics, IEC, recordkeeping  <b>Service outputs:</b> access to service, quality of care, and program image
<b>Tracking the results</b>	<b>Service utilization:</b> results produced at the program level (e.g., number of acceptors, number of visits, CYP, etc.)  <b>Outcomes:</b> intermediate or long-term changes at the population level (e.g., contraceptive prevalence, median interval between births)

## VISUAL AID 12

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### ISSUES TO BE CONSIDERED WHEN CARRYING OUT PERFORMANCE MONITORING AND IMPROVEMENT

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- Ideally, PMI employs both **quantitative** and **qualitative techniques**.
- It is not practical to attempt a detailed monitoring & evaluation of all aspects of a program. Rather, it is important to prioritize those aspects of the program for which the information will be most useful to the organization and crucial to the success of the program itself.
- Monitoring & evaluation activities are generally staggered. Some may be done routinely (e.g., collection and reporting of service statistics), others on periodic basis (e.g., monthly/quarterly reports of progress, simulated client survey to assess quality of care), and others as a one-time exercise (e.g., analysis of cost per CYP for different contraceptive methods).

## VISUAL AID 13

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**Table # 3: Using the conceptual framework to identify issues to address in PMI**

<b>PROGRAM COMPONENT</b>	<b>QUANTITY COMPONENT</b>	<b>QUALITY COMPONENT</b>	<b>COST COMPONENT</b>
<b>INPUTS</b>	What types & level of resources were allocated to this intervention?	Were qualified personnel available to implement activities?	What was the unit cost & the total cost of each resource? The cost of the program?
<b>OUTPUTS:</b> Functional/support areas ( such as training)	How many persons were trained, by category of personnel?	Were trained staff able to perform tasks competently 6 months following training?	What was the cost per participant-day of training?
<b>OUTPUTS:</b> Service outputs	<b>Access:</b> Did the number of SDPs or health units providing service increase?	Did the quality of care improve over time?	What was the added cost of increasing the numbers of SDPs/health units of improving the quality of care?
<b>OUTPUTS:</b> Service utilization	Did the number of new acceptors or CYP increase over time	Has percent of clients returning for follow-up appointments increase?	What was the added cost associated with the increase in new acceptors with the increase in CYP?
<b>OUTCOME:</b> Intermediate outcomes	Was there a change in the key behavior (e.g., contraceptive prevalence) among the target population?	Was there a change in the key behavior (e.g., use of condoms with non-regular sexual partner, use of quality services at SDP) in the target population?	What was the increase in costs associated with the change in contraceptive prevalence?
<b>OUTCOME:</b> Long-term outcomes	Did fertility rates change over time?	Did women achieve their reproductive health intentions?	What was the cost of achieving the fertility change?

## **VISUAL AID 14**

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### **PRACTICAL ASPECTS OF PMI**

**❖ PMI includes measuring the current status and change over time in any of the program components.**

#### **At the program level:**

- Inputs: (Examples: drugs, financial and human resources)
- Outputs: (Examples: number of health workers trained, number of health committees established, number of new acceptors of family planning services)

#### **At the population level:**

- Outcomes:
  - (1) Intermediate outcomes (e.g., contraceptive prevalence)
  - (2) Long-term outcomes (e.g., total fertility rate)

# DAY TWO

## B. LESSON PLAN TWO FOR MORNING AND AFTERNOON SESSIONS

### 1. Objectives

By the end of the day's sessions, participants will be able to:

- (a) Define and explain the uses of health service coverage
- (b) Discuss the advantages and limitations of performance monitoring
- (c) List at least three characteristics of good indicators
- (d) Describe the basic steps in planning and carrying out PMI

### 2. Methods (same as previous session)

- Short presentations
- Interactive discussions with participants
- Class and small group exercise

### 3. Course materials

- Flipchart paper pad and stand
- Tape (masking)
- Chalk (one small box)
- Markers
- Reference materials (PMI and training manuals)
- Folders containing writing pads, pen, pencil, eraser, and course schedule and reading materials (handouts)

### 4. Trainer's guide and schedule of activities

Time	Activity/Topic and Steps	Visual Aid/Handout
08:00 – 08:30	▪ Administration and set-up	
08:30 – 09:00	<ul style="list-style-type: none"> <li>▪ <b>HEALTH SERVICE COVERAGE</b></li> <li>▪ The trainer presents and explains the Day Two objectives, <b>Visual Aid 1</b></li> <li>▪ The trainer should guide the participants with the review of the definition of PMI, <b>Visual Aid 2(a)</b></li> <li>▪ Trainer should assist also with the review of the primary purpose of PMI, <b>Visual Aid 2(b)</b></li> <li>▪ <b>Why Health Service Coverage (HSC)?</b> Ask participants to contribute ideas to this topic and then summarize with <b>Visual Aid 3</b></li> <li>▪ <b>Advantages and limitations of HSC:</b> Use <b>Visual Aid 4</b> to guide the discussions</li> </ul>	<p><b>Visual Aid 1:</b> Objectives for Day Two</p> <p><b>Visual Aid 2(a):</b> Defining PMI</p> <p><b>Visual Aid 2(b):</b> Primary purpose of PMI</p> <p><b>Visual Aid 3:</b> Preliminary steps in planning PMI</p> <p><b>Visual Aid 4:</b> Advantages and limitations of PMI</p>
09:00 – 10:00	<ul style="list-style-type: none"> <li>▪ <b>Continue discussion using Visual Aid 5:</b> To summarize the principles, the methodology, and the</li> </ul>	<b>Visual Aid 5:</b> Health Service Coverage principles, methodology,

Time	Activity/Topic and Steps	Visual Aid/Handout
	<p>purpose of HSC</p> <ul style="list-style-type: none"> <li>▪ Discuss and define each of the HCS</li> <li>▪ Measurement in practice: As discussed during Day One sessions, ask participants to list some examples of components whose coverage &amp; PMI can be measured (i.e., EPI, PNC, PCC, and family planning)</li> <li>▪ Measurement in practice: Trainer should re-introduce the concept of measurement. <b>Visual Aid 7</b> should assist with presentation and discussions</li> </ul>	<p>and purpose</p> <p><b>Visual Aid 6:</b> HSC definition &amp; indicators</p> <p><b>Visual Aid 7:</b> Measurement in practice</p> <p><b>Visual Aid 8:</b> Preliminary steps in carrying out PMI and HSC</p>
	<p><b>INDICATOR:</b></p> <ul style="list-style-type: none"> <li>▪ What does the word “<b>indicator</b>” mean? Ask participants to contribute answers to this question before summarizing with <b>Visual Aid 9</b></li> <li>▪ Review characteristics of a good indicator</li> <li>▪ Ask participants to contribute ideas and then summarize with the details from <b>Visual Aid 10</b></li> <li>▪ Discuss factors that affect the selection of indicators, <b>Visual Aid 11</b> provides the details</li> <li>▪ Ask participants why there is a need to use multiple indicators when discussing TFR, CPR of developing countries</li> <li>▪ Summarize by stating that multiple indicators are used when there is no reliable health statistics or functioning HIS in a country</li> </ul>	<p><b>Visual Aid 9:</b> Define the indicator</p> <p><b>Visual Aid 10:</b> Characteristics of a good indicator</p> <p><b>Visual Aid 11:</b> Factors that affect the selection of indicators</p>
10:00 – 10:15	<b>Coffee/Tea Break</b>	
10:15 – 11:30	<p><b>PLANNING FOR DATA COLLECTION &amp; ANALYSIS:</b></p> <ul style="list-style-type: none"> <li>▪ Invite participants to list some of the steps for planning data collection and analysis include: Summarize with <b>Visual Aid 1</b></li> <li>▪ Encourage participants to present and discuss <b>source of data</b>, and summarize with <b>Visual Aid 13</b></li> <li>▪ Using the interactive mode of presentation, discuss each of the elements that are contained in the Methodological Approach to PMI, <b>Visual Aid 14</b></li> </ul>	<p><b>Visual Aid 12:</b> Steps for planning data collection and analysis</p> <p><b>Visual Aid 13:</b> Source of data</p> <p><b>Visual Aid 14:</b> Overview of the Methodological Approach to PMI</p>
11:30 – 12:30	<ul style="list-style-type: none"> <li>▪ Continue discussion of Methodological Approach to PMI</li> </ul>	<b>Handout/Visual Aid 14</b>
12:30 – 13:30	<b>LUNCH BREAK</b>	
13:30 – 14:30	<ul style="list-style-type: none"> <li>▪ Methodological Approach to PMI (continues)</li> </ul>	
14:30 – 15:00	<ul style="list-style-type: none"> <li>▪ Methodological Approach to PMI (continues)</li> </ul>	
15:00 – 15:15	<b>COFFEE/TEA BREAK</b>	
15:15 – 16:30	<ul style="list-style-type: none"> <li>▪ Introduce the first five (5) steps that need to be considered when planning and carrying out PMI</li> <li>▪ With contributions from participants, the trainer will summarize the Day Two activities or topics covered during the Day Two sessions.</li> </ul>	<b>Visual Aid 15:</b> Steps for planning and carrying out PMI
16:30 – 17:00	<ul style="list-style-type: none"> <li>▪ Sessions evaluation by participants using a short questionnaire designed by trainers.</li> <li>▪ Trainers meet to review the evaluation results and plan the next day activities</li> </ul>	

**Visual Aids**  
**For**  
**Day Two Sessions**

## **VISUAL AID 1**

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**By the end of the day's two sessions, participants will be able to:**

- (a) Define and explain the uses of health service coverage (HSC)
- (b) Discuss the advantages and limitations of PMI
- (c) List at least three characteristics of good indicators
- (d) Describe the basic steps in planning and carrying out PMI

## VISUAL AID 2(a)

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### DEFINING PERFORMANCE MONITORING AND IMPROVEMENT (PMI)

PMI is a synergistic combination of various methods and techniques that are directed towards improving service delivery process to achieve the highest health coverage of the target populations.

PMI strategy is based on health coverage measurement principles. As stated by World Health Organization (WHO):

*“Health service coverage focuses on the people for whom the service has satisfied certain criteria regarding its defined objective, and compares their number with the target population”* (Tanahashi, T., WHO, 1978).

## VISUAL AID 2(b)

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### I. REVIEW OF PRIMARY PURPOSE OF PERFORMANCE MONITORING AND IMPROVEMENT

As discussed in the preceding sections, PMI has two main purposes:

- ***To improve program by identifying those aspects that are working according to plan and those that are in need of mid-course corrections*** (Example: to enhance quality of care, a number of countries have experimented with the adoption of “Client-Oriented Provider-Efficient” technique)
- ***To track and demonstrate results at the program or population level*** (Example: data are not aggregated, but are rather analyzed by the service providers to identify changes that can take place at the local level to address problems identified by the exercise).

### II. EXAMPLES OF SELECTED ACTIVITIES TO BE MONITORED

As mentioned above, it would a mistake to try to monitor all activities in an organization or system. It is strongly advised to select the activities that have had the largest impact on the achievement of the objectives and goals of the institution or system. To reduce high maternal and infant mortality rates at the district level, the following four key activities are usually selected for monitoring purposes:

- (a) Expanded Program of Immunization (EPI)
- (b) Primary Curative Care Consultation (PCC)
- (c) Prenatal Care (PNC) services

(d) Family Planning services (FP)

**Notice:** It is common to add to these key health service activities the monitoring of financial resources, mainly in a system where the cost-sharing or recovery schemes are being applied.

## **VISUAL AID 3**

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### **Why Health Service Coverage?**

- Efforts to measure morbidity and mortality in order to evaluate the impact of the PHC programs in less developed countries (LDCs) have been unsuccessful
- Evaluation at the end of programs failed to properly address the improvement of program implementation and the effectiveness issues
- It did not address the fundamental issues in the management of PHC activities at the operational level

# **VISUAL AID 4**

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## **ADVANTAGES AND LIMITS OF PMI**

### **ADVANTAGES**

- The process is timely and can be applied to ongoing project activities without major constraints (funding and logistical support)
- Serves as management tool that identifies weaknesses of the program and allows health managers to take timely corrective action that can redress the course of the program
- Provides viable information on the functioning of district-based programs

### **LIMITS**

- It requires the availability of a structured program or project with well-defined key activities (components) that can be measured
- It requires program-based and population-based reliable data and information
- It requires the establishment of measurable indicators

## **VISUAL AID 5**

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### **Principles, Methodology, & Purpose**

- Measurement of Health Service Coverage starts with resource availability and ends with the individual and social benefits assessment.
- The coverage approach focuses on the people for whom the service has satisfied certain criteria regarding its defined objective, and compares their numbers with the target population.

### **PURPOSE:**

Health coverage monitoring aims to provide managers at the operational level with essential information regarding all aspects of the process by which the PHC programs or activities are being implemented.

# VISUAL AID 6

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## HEALTH SERVICE COVERAGE

### **Definition: Coverage Measurement**

A coverage measure is a ratio between the number of people for whom the desired conditions are met and the targeted people for a given service.

Its evaluation enables management to identify bottlenecks in service operation, analyze the constraining factors responsible for those bottlenecks, and to select effective measures for service development (Tanahashi, T., 1978).

### **TYPES OF SERVICE COVERAGE INDICATORS:**

- (a) Availability coverage:** Ratio between the real capacities of the service related to the availability of needed resources to provide a given service and the total target population. The real capacity of a health facility expresses the amount of service that can be made available to the target population and dictates the number of people who can receive the service.
- (b) Accessibility coverage:** Ratio between the target population living within reasonable reach (5kms/1hr walk) from the service location and the total number of the target population who should benefit from the service.
- (c) Contact/utilization coverage:** Ratio between the target population who contacted or utilized the service at least once and the total target population by service who should utilize it.
- (d) Adequate coverage:** Ratio between the target population who have received all services or aspects of a given service with respect to basic rules previously set, and the target population that has a least once contacted or utilized the service.
- (e) Effective coverage:** Ratio between the target population that has adequate coverage with respect to all technical requirements regarding the provision of the service, and the target population that has adequate coverage. From the example above, it will be the children with adequate coverage, and with vaccines well preserved at correct temperatures (4 °C, 8 °C) and given with an appropriate vaccination technique. That is to say, children correctly immunized against diseases for which they are vaccinated.

## **VISUAL AID 7**

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### **Measurement in practice**

Two types of measurements are under consideration when measuring health services coverage:

#### **(1) Measurement of the service target population**

This can be obtained from a census or a particular survey. For prevention-oriented interventions, the service target population is determined by the demographic characteristics of the population, and the unit of measurement is also demographic, such as the person or the household.

#### **(2) Measurement of the service provision**

This is done for each of the five steps (or indicators) discussed above, for which the information can be collected from the records of the service deliveries. If needed information is not relevant, a pilot study or research may be undertaken to obtain it.

## **VISUAL AID 8**

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### **PRELIMINARY STEPS IN PLANNING PMI**

- Ensure that planning meetings have already taken place with local health officials, health workers, and members of the health committees in advance of PMI
- Ensure availability of demographic data for the catchment area and the facility to be monitored
- Prepare the necessary management tools for the assessment (e.g., register for newborn visits, register for prenatal visits, register for family planning services, register for EPI, register for primary curative services, register for daily distribution of drugs, updated stock cards for the logistics of contraceptives and essential drugs).

## VISUAL AID 9

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### Defining the Indicator

Indicators are variables that measure the different aspects of a given program, such as the inputs, process, outputs, and outcomes.

An indicator can be assigned a numeric value (i.e. percentage, a mean value, a ranking, an absolute number, or a Yes or No)

- It should be noted that program monitoring consists of measuring how well the program is doing in one or more of the boxes presented in **Table 3** above.
- Program monitoring quantifies what actually occurs at each level (of inputs, processes, outputs, and outcomes).
- For a given evaluation/assessment, one should prioritize indicators based on specific program objectives and select a manageable set of indicators that satisfy the evaluation objectives.
- In short, it is essential to identify the key question(s) being addressed in a particular evaluation and then select the indicators accordingly.

## VISUAL AID 10

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### Characteristics of Good Indicators

- **Valid:** the indicator measures what it is supposed to measure
- **Reliable:** the value remains the same regardless of repeated measurement
- **Defined in clear, precise terms:** the indicator must be operationally defined so that others can know precisely what is being measured (example: “family planning acceptor”)
- **Comparable across different population groups and program approaches.** For example: all things being equal, one would choose a CPR which is based on women aged 15-49 rather than on women aged 15-44, because earlier figures would be most comparable to rates from other programs.
- Indicators should be **non-directional in** nature. For example, a percentage of SDPs that encountered a stock-out during the past 6 months, which can be tracked over time, is a good indicator, not a decrease in the percentage of SDPs that had a stock-out.
- Indicators should be **collected on a timely basis.** The indicator should provide a measurement for a recent period (the period during which then intervention occurred).

## **VISUAL AID 11**

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### **Factors that affect the selection of indicators**

- Availability of data needed to measure the indicator
- Amount of time allocated for the evaluation exercise
- Financial support available for the evaluation
- Donor agency requirements: example—CYP has become the most widely used measure of service utilization in USAID-funded programs, because USAID (as well as IPPF) require recipient agencies to report this particular result.

### **Use of multiple indicators**

In countries where the quality of MIS data is suspect, it is advisable to use two or more well-established indicators, such as TFR and CPR, to measure given results, rather than use one indicator.

## **VISUAL AID 12**

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### **Steps for Planning Data Collection & Analysis**

During the planning phase of **PMI**, the following steps should be taken into consideration:

- Select the most appropriate period to carry out monitoring activities in consultation with health officials and the local partners
- Decide on the duration of the monitoring exercise in consultation with partners
- Establish a theoretical number of children aged 0-11 months in the catchment area
- Establish a theoretical number of expected pregnancies in the year
- Establish a theoretical number of potential family planning clients (women of reproductive age 15-49 years)

## VISUAL AID 13

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### Identify sources of data

The most common sources of data being measured (evaluated), for family planning programs for instance, are population-based and program-based data. On the other hand, when multiple sources of data exist, one would need to consider those options as well.

### Sources of data

COMPONENT TO MEASURE	SOURCE OF DATA
Outputs (Program-based)	Program records, special service statistics Facility surveys Data on the commercial sector Special studies
Outcomes (population-based)	DHS-type household surveys

## **VISUAL AID 14**

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### **OVERVIEW OF METHODOLOGICAL APPROACH TO PMI**

1. Clarify the primary purpose of monitoring/coverage measurement
2. Selection of activity (component) to be monitored/measured
3. Define relevant indicators to use
4. Identify the target population
5. Identify the source of data
6. Planning for data collection procedures
7. Data analysis and presentation of results
8. Microplanning and how to address the gaps

## VISUAL AID 15

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### **Summary of key steps for planning and carrying out Performance Monitoring and Improvement**

1. Select the monitoring team and allocate tasks to each member
2. Determine the target population for each activity
3. Identify and assess the sources of data to use
4. Obtain a list of personnel for each facility
5. Perform the sampling and data collection using a systematic sampling method to cover the entire period
6. Fill out the monitoring results grids
7. Draw the curve of the results
8. Analyze and determine the factors of bottleneck identified using the PMI for PHC (PMIP) services grid
9. Compare the previous to the actual performance for each activity
10. Carry out planning for the corrective measure to apply
11. Carry out budgeting for the next six months

**Note:** Have a quick look at the tools in the Annex to better understand what they look like and how to perform the listed tasks.

# **DAY THREE**

## **C. LESSON PLAN THREE FOR MORNING AND AFTERNOON SESSIONS**

### **1. Objectives**

By the end of the day three sessions, participants will be able to:

- (a) List and discuss steps involved in the methodological approach to PMI
- (b) Discuss sources of data for components to be measured
- (c) Design a PMI plan based on stated project/program objectives and activities

### **2. Methods (same as Day One and Day Two)**

- Short presentations
- Interactive discussions with participants
- Class and small group exercise

### **3. Course materials**

- Flipchart paper pad and stand
- Tape (masking)
- Chalk (one small box)
- Markers
- Reference materials (PMI and training manuals)
- Folders containing writing pads, pen, pencil, eraser, and course schedule and reading materials (handouts).

### **4. Trainer's guide and schedule of activities**

<b>Time</b>	<b>Activity/Topics and Steps</b>	<b>Visual Aid/Handout</b>
08:00 – 08:30	▪ Administration and set up.	
08:30 – 09:00	<ul style="list-style-type: none"> <li>▪ Trainer guides the participants with the review of the Day Three objectives, <b>Visual Aid 1</b></li> <li>▪ With contributions from participants, carry out an overview of steps for planning &amp; carrying out PMI process, <b>Visual Aid 2</b></li> <li>▪ Through interactive discussions with participants, review the eight steps under the Methodological Approach to PMI (summarize the steps with <b>Visual Aid 3</b>)</li> </ul>	<p><b>Visual Aid 1:</b> Objectives for Day Three</p> <p><b>Visual Aid 2:</b> Overview of steps for planning &amp; implementing PMI</p> <p><b>Visual Aid 3:</b> Summary of the eight steps in Methodological Approach to PMI</p>
09:00 – 10:00	▪ Through discussions with participants, review the indicators of health service coverage. Trainer should use	<b>Visual Aid 4:</b> Review of indicators of health service coverage

Time	Activity/Topics and Steps	Visual Aid/Handout
	<p><b>Visual Aid 4</b> to summarize the review process.</p> <ul style="list-style-type: none"> <li>Trainer should assist participants in reviewing each of the indicators of health service coverage measurements</li> <li>Trainer should provide examples of how to calculate the EPI coverage using formula from the handout.</li> <li>Divide participants in three groups of five to six members each.</li> <li>Provide handouts containing the determinants and explain how the exercises should be done in groups</li> <li>Each group will be assigned a component to be measured as indicated: (i.e., EPI, PNC, and PCC).</li> </ul>	<p><b>Provide Handouts:</b> Grids containing determinants and calculation methods for EPI, PNC, and PCC coverage</p>
10:00 – 10:15	<b>COFFEE/TEA BREAK</b>	
10:15 – 11:30	<ul style="list-style-type: none"> <li>Group exercise: Coverage measurement</li> </ul>	
11:30 – 12:30	<ul style="list-style-type: none"> <li>Group exercise: Coverage measurement</li> </ul>	
	<b>LUNCH BREAK</b>	
13:30 – 14:30	<ul style="list-style-type: none"> <li>Group presentation</li> </ul>	
14:30 – 15:30	<ul style="list-style-type: none"> <li>Group presentation</li> </ul>	
15:30 – 15:45	<b>COFFEE/TEA BREAK</b>	
15:45 – 16:30	<ul style="list-style-type: none"> <li>Summary of Day Three activities with support from the trainers</li> <li>Sessions evaluation by participants with a short questionnaire prepared by trainers for the Day Three activities</li> <li>Trainers meet to review the evaluation results and prepare for Day Four activities</li> </ul>	

**Visual Aids**  
**For**  
**Day Three Sessions**

## **VISUAL AID 1**

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By the end of the day three sessions, participants will be able to:

- (a) List and discuss the steps that are included in the Methodological Approach to PMI
- (b) Discuss sources of data for components to be measured
- (c) Design a PMI plan based on stated project or program objectives and activities

## **VISUAL AID 2**

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### **OVERVIEW OF PRELIMINARY STEPS FOR PLANNING AND IMPLEMENTING PMI**

- Ensure that planning meetings have already taken place with local health officials, health workers, and members of the health committees in advance of PMI
- Ensure availability of demographic data for the catchment area and the facility to be monitored
- Prepare the necessary management tools for the assessment (i.e., register for newborn visits, register for prenatal visits, register for family planning services, register for EPI, register for primary curative services, register for daily distribution of drugs, updated stock cards for the logistics of contraceptives and essential drugs).

## **VISUAL AID 3**

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### **OVERVIEW OF METHODOLOGICAL APPROACH TO PMI**

1. Clarify the primary purpose of monitoring
2. Selection of key activities to be monitored
3. Define relevant indicators to use
4. Identify the target population
5. Identify the source of data
6. Planning for data collection procedures
7. Data analysis and presentation of results
8. Microplanning and how to address the constraints

## VISUAL AID 4

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### DETAILED REVIEW OF INDICATORS OF HEALTH SERVICE COVERAGE

The following are the definitions of indicators of health service coverage:

- (a) Availability coverage:** Ratio between the real capacities of the service related to the availability of needed resources to provide a given service and the total target population. The real capacity of a health facility expresses the amount of service that can be made available to the target population and dictates the number of people who can receive the service.
- (b) Accessibility coverage:** Ratio between the target population living within reasonable reach (5km/1 hr walk) from the service location and the total number of the target population who should benefit from the service.
- (c) Contact/utilization Coverage:** Ratio between the target population who contacted or utilized the service at least once and the total target population by service who should utilize it.
- (d) Adequate coverage:** Ratio between the target population who have received all services or aspects of a given service and the target population that has at least once contacted or utilized the service.
- (e) Effective coverage:** Ratio between the target population that has adequate coverage with respect to all the technical requirements regarding the provision of the service, and the target population that has adequate coverage. From the example above, it will be the children with adequate coverage, and with vaccines well preserved in correct temperatures (4 °C, 8 °C) and given with an appropriate vaccination technique. That is to say, those children, which are supposed to be immunized against diseases for which they are vaccinated. This means also service effectiveness.

# **DAY FOUR**

## **D. LESSON PLAN FOUR FOR MORNING AND AFTERNOON SESSIONS**

### **1. Objectives**

By the end of the day four sessions, participants will be able to:

- (a) Describe the process for performance monitoring and coverage measurement;
- (b) Develop a plan of how to address the constraints;
- (c) Describe and provide two examples of alternative financing of health services; and
- (d) List the basic steps that are recommended for carrying out financial monitoring at health center

### **2. Methods**

- Short presentations
- Interactive discussions with participants
- Class and small group exercise

### **3. Course materials**

- Flipchart paper pad and stand
- Tape (masking)
- Chalk (one small box)
- Markers
- Reference materials (PMI and training manuals)
- Folders containing writing pads, pen, pencil, eraser, and course schedule and reading materials (handouts).

### **4. Trainer's guide and schedule of activities**

<b>Time</b>	<b>Activity/Topics and Steps</b>	<b>Visual Aid/Handout</b>
08:00 – 08:30	▪ Administration and set up	
08:30 – 09:00	▪ Review of the objectives, <b>Visual Aid 1</b> ▪ Guide the participants with the review of steps 6, 7, and 8 of the Methodological Approach to PMI. Summarize with <b>Visual Aid 2</b>	<b>Visual Aid 1:</b> Objectives <b>Visual Aid 2:</b> Review of steps 6, 7, and 8 of the Methodological Approach to PMI
09:00 – 10:00	▪ Through interactive presentation, discuss steps for data analysis and presentation, <b>Visual Aid 3</b> ; steps for microplanning & how to address the constraints, <b>Visual Aid 4</b>	<b>Visual Aid 3:</b> Review of steps for carrying out data analysis and presentation <b>Visual Aid 4:</b> Review of steps for carrying out microplanning & how

Time	Activity/Topics and Steps	Visual Aid/Handout
		to address the constraints. Summary of activities to be carried out to facilitate microplanning and the resolution of constraints.
	<ul style="list-style-type: none"> <li>Continue discussion of items 6, 7, and 8 with <b>Visual Aids 2, 3, and 4.</b></li> </ul>	
10:00 – 10:15	<b>COFFEE/TEA BREAK</b>	
10:15 – 11:30	<ul style="list-style-type: none"> <li>Through discussion and interactions with participants, carry out the review of key steps for implementing PMI</li> </ul>	<b>Visual Aid 5:</b> Summary of key steps for implementing PMI
11:30 – 12:30	<ul style="list-style-type: none"> <li>Introduction to monitoring of finance at primary level facilities</li> <li>Ask participants to list examples of alternative financing of health services (<b>Visual Aid 6:</b> Examples of alternative financing)</li> <li>Trainer guides the participants in reviewing the steps that can be used in carrying out a financial analysis of a health center: <b>Visual Aid 7</b></li> <li><b>CLASS EXERCISE:</b> With active involvement of participants, distribute handouts on financial monitoring, and do a class exercise to demonstrate how to calculate total costs and total revenues of a health center</li> </ul>	<p><b>Visual Aid 6:</b> Possible examples of alternative financing of health services</p> <p><b>Visual Aid 7:</b> Steps in carrying out a financial analysis of a health center</p> <p><b>Handout:</b> On financial monitoring of a health facility</p>
	<b>LUNCH BREAK</b>	
13:30 – 14:30	<ul style="list-style-type: none"> <li>Presentation and calculation of total expenditures and revenues of a health center over a three to six month period.</li> <li>Guide the participants with the review of <b>Visual Aid 8:</b> Summary of expenditures</li> <li>Review <b>Visual Aid 9:</b> Summary of receipts/revenues of a health center</li> <li>Carry out the review of <b>Visual Aid 10</b></li> </ul>	<p><b>Visual Aid 8:</b> Summary table of expenditures</p> <p><b>Visual Aid 9:</b> Summary table of revenues for the health center</p> <p><b>Visual Aid 10:</b> Summary table of cases</p>
14:30 – 15:30	<ul style="list-style-type: none"> <li>Continue the above exercises in groups followed by group presentations</li> </ul>	
15:30 – 15:45	<b>COFFEE/TEA BREAK</b>	
15:45 – 16:30	<ul style="list-style-type: none"> <li>The trainer summarizes the review of Day Four activities</li> <li>Participants will perform the day four sessions evaluation</li> <li>Trainers meet to review Day Four activities and plan for Day Five activities</li> </ul>	

**Visual Aids**  
**For**  
**Day Four Sessions**

# **VISUAL AID 1**

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## **OBJECTIVES**

By the end of Day Four, participants will be able to:

- (a) Describe the process for PMI
- (b) Develop a plan of how to address the constraints
- (c) Describe and provide two examples of alternative financing of health services
- (d) List the basic steps that are recommended for carrying out financial monitoring at health center

## **VISUAL AID 2**

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### **REVIEW OF STEPS 6, 7, AND 8 OF METHODOLOGICAL APPROACH TO PMI**

#### **(6) Identification of service bottlenecks (T. Tanahashi Method)**

The stages in service provision have been identified in such a way that certain inequalities exist between them. A large difference between an adjacent pair of coverage measurements implies that for a significant proportion of the target population, the service is failing to meet the requirements for programs in service provision. This indicates the existence of problems or bottlenecks in the service provision.

#### **(7) Analysis of constraints**

Bottlenecks demonstrate where the difficulty in service provision lies, but do not pinpoint the factor accountable for the poor coverage. Therefore, relevant information is required to properly analyze all aspects related to the provision and utilization of the service by the target population. Health personnel as well as the users of services can facilitate the identification of bottlenecks.

#### **(8) Cost effectiveness for service development**

As stated by T. Tanahashi, 1978, once the factors constraining service development become known, proper remedial action needs to be taken. A cost-effective analysis must be done first before deciding upon the necessary action for solving the identified problem.

Each of the interventions potentially capable of solving the bottleneck has to be analyzed in terms of its cost and effectiveness and then the most cost-effective method should be selected.

It clearly appears that health service coverage measurement has many advantages when applied at the implementation phase of the PHC programs. Indeed, it requires a good information system, whose creation or improvement can be seen as part of the application approach.

## **VISUAL AID 3**

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### **REVIEW OF STEPS IN CARRYING OUT DATA ANALYSIS AND PRESENTATION OF RESULTS**

#### **Step # 7: Data analysis and presentation**

Deciding on the format for presenting the results of PMI before it is carried out is important for the following reasons:

- It allows the evaluators/researchers to map out how the information will be processed and presented well in advance of data collection phase.
- It organizes the evaluation process and makes it more efficient, and allows the evaluators to have a general idea about what is needed and expected for the evaluation process.

# VISUAL AID 4

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## REVIEW OF STEPS IN CARRYING OUT MICROPLANNING AND HOW TO ADDRESS CONSTRAINTS

### Step # 8: Microplanning & how to address the constraints

Microplanning consists of strategies selected at field level of the programs to resolve problems that have been identified during performance monitoring.

Through the use of microplanning process and with support from health workers, members of health committees, and health managers, the team can do the following:

- Divide the tasks to be carried out to members of the committee and the health unit (based on their ability and their availability to carry out the prescribed tasks)
- Establish a calendar of activities for the next six months that would be concerned with the next PMI
- For each activity, describe the tasks to be followed up in chronological order
- Determine the necessary resources and identify the source for those resources so that recommended activities can be carried out without constraints

Some of the activities that would be used during the review, data analysis, and the microplanning process include:

**(a) Monitoring curve:** Once data has been collected and rates calculated, the following step is to draw the monitoring curve from those results using the grid that has been provided in the Annex of the Manual. The grid allows the presentation of rates in percentage that have been achieved for each of the selected indicators and the target population.

**(b) Identification of service bottlenecks:** This refers to stages in service provision where they are presented in such a way that demonstrates inequalities among them. A large difference between an adjacent pair of coverage measurements implies that for a significant proportion of the target population, the service is failing to meet the requirements of programs for service provision. This indicates the existence of problems or bottlenecks in service provision.

**(c) Analysis of constraints** (from the geographical coverage, LQAS): Bottlenecks demonstrate where difficulties in service provision lie but do not pinpoint the factor accountable for the poor coverage. Therefore, relevant information is required to properly analyze all aspects related to provision and utilization of service by the target population. Health personnel as well as users of the facilities can facilitate the identification of the bottlenecks.

**(d) Planning for corrective measures** (ref. to grid that has been provided in annex): Based on the bottleneck identified and the low geographic coverage and/or poor quality of the services, an action plan needs to be developed to answer the following questions:

1. What should be done?
2. How should it be done?
3. Where?
4. When?
5. Who should do it?
6. With whom?
7. With what resources?
8. What are the potential constraints?

**(e) Cost effectiveness for service development:** Once factors constraining the services have been identified, proper remedial actions should be taken to address the problems. A cost effectiveness analysis or an identification of the best or most promising practices must be done before deciding on the necessary action for solving the problem that has been identified.

Each of the interventions potentially capable of solving the bottleneck has to be analyzed in terms of its cost and effectiveness aspects and then the most cost-effective method to address the constraint (or bottleneck) can be selected.

## **VISUAL AID 5**

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### **REVIEW OF KEY STEPS FOR IMPLEMENTING PMI**

- C. Summary of key steps for implementing PMI of PHC activities**
1. Select the monitoring team and allocate tasks to each member
  2. Determine the target population for each activity
  3. Identify and assess the sources of data to use
  4. Obtain a list of personnel for each facility
  5. Perform the sampling and data collection using a systematic sampling method to cover all the period
  6. Fill out the monitoring results grids
  7. Draw the curve of the results
  8. Analyze and determine the factors of bottleneck identified using the Performance Monitoring & Improvement for PHC (PMIP) services grid
  9. Compare the previous to the actual performance for each activity
  10. Carry out planning for the corrective measure to apply
  11. Carry out budgeting for the next six months

## **VISUAL AID 6**

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### **STEPS FOR CARRYING OUT FINANCIAL ANALYSIS OF A HEALTH CENTER**

Some of the recommended steps in financial analysis of a health center include:

- (1) Inventory the expenditures and receipts for the health center's operations
- (2) Develop a financial statement (balance sheet) for the health center (see model provided in annex)
- (3) Determine the viability of the health center's operations through calculation of the recovery rate

## **VISUAL AID 7**

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### **ALTERNATIVE FINANCING OF HEALTH SERVICES**

**In developing countries, most of the governments and non-governmental organizations (NGOs) support primary-level activities of health centers through the following alternative financing options:**

- Subsidies from central or provincial government budget
- Donations (grants) from donor organizations, including NGOs
- User fees mechanism that is managed by health facilities personnel
- Cost sharing and recovery mechanisms
- Prepayment mechanisms such as mutuals

## **VISUAL AID 8**

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### **SUMMARY TABLE OF EXPENDITURES**

#### **Summary table of health center costs**

<b>#</b>	<b>Description/Category</b>	<b>Total cost per quarter</b>
1.	Medicines	1,345.00
2.	Management tools (office supplies)	106.00
3.	Personnel-related costs	3,900.00
3.	Operating costs	822.00
	<b>TOTAL</b>	<b>\$6,173.00</b>

## VISUAL AID 9

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### SUMMARY TABLE OF REVENUES (RECEIPTS)

**Summary table of revenues (receipts)**

#	Category	January	February	March	Total
1.	Primary Care Consultations	\$450.00	\$380.00	\$500.00	\$1,330.00
2.	Prenatal Consultations	\$350.00	\$400.00	\$500.00	\$1,250.00
3.	Deliveries	\$400.00	\$450.00	\$350.00	\$1,200.00
4.	Medicines	\$850.00	\$900.00	\$1,500.00	\$3,250.00
5.	Other contributions	\$100.00	\$100.00	\$100.00	\$300.00
	TOTAL				\$7,330.00

## **VISUAL AID 10**

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### **SUMMARY TABLE OF CASES**

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#	Type of consultation	Number of cases
1.	Curative consultations (Adults)	140
2.	Curative consultations (Pediatrics)	160
3.	Prenatal consultations	150
4.	Deliveries	100
	TOTAL	550

# **DAY FIVE**

## **E. LESSON PLAN FIVE FOR MORNING AND AFTERNOON SESSIONS**

### **1. Objectives**

By the end of the day's sessions, participants will be able to:

- (a) Describe the steps that are recommended to perform financial monitoring and analysis at health center level
- (b) List the indicators that are needed to calculate the recovery rate of a health center
- (b) Describe the use of recovery rate as the method that can be used to determine the financial viability of a health center

### **2. Methods (same as previous days)**

- Short presentations
- Interactive discussions with participants
- Class and small group exercise

### **3. Course materials**

- Flipchart paper pad and stand
- Tape (masking)
- Chalk (one small box)
- Markers
- Reference materials (PMI and training manuals)
- Folders containing writing pads, pen, pencil, eraser, and course schedule and reading materials (handouts)

### **4. Trainer's guide and schedule of activities**

<b>Time</b>	<b>Activity/Topics and Steps</b>	<b>Visual Aid/Handout</b>
08:00 – 08:30	▪ Administration and set up	
08:30 – 09:00	<ul style="list-style-type: none"> <li>▪ Trainer presents the objectives for Day Five, <b>Visual Aid 1</b></li> <li>▪ Through interactive discussions with participants, review indicators of financial monitoring that are used at HC/HP levels</li> <li>▪ Trainer should summarize by presenting <b>Visual Aid 2 (Handout: Indicators of financial monitoring)</b></li> <li>▪ Trainer should guide the participants in reviewing the grids that are provided to review the options for preparing a budget analysis</li> </ul>	<b>Visual Aid 1:</b> Objectives <b>Visual Aid 2:</b> Review of indicators of financial monitoring
09:00 – 10:00	▪ Continue discussion of indicators of financial monitoring	

<b>Time</b>	<b>Activity/Topics and Steps</b>	<b>Visual Aid/Handout</b>
	<ul style="list-style-type: none"> <li>▪ Invite participants to discuss the needs to improve financial management at health center to support program development.</li> <li>▪ Discuss the option to involve the communities in the financing of health center activities to promote financial sustainability.</li> </ul>	<b>Visual Aid 3:</b> Review of community financing capacity to support selected investment and operating costs
	<ul style="list-style-type: none"> <li>▪ The trainer should guide the participants in reviewing the recommended steps in financial analysis of a health center</li> </ul>	<b>Visual Aid 4:</b> Review of commended steps in carrying out financial analysis at health centers
10:00 – 10:15	<b>COFFEE/TEA BREAK</b>	
10:15 – 11:30	<ul style="list-style-type: none"> <li>▪ Divide the class in three groups. Each group will be tasked with the responsibility to determine the financial viability of a health center through calculation of the facility's recovery rate</li> <li>▪ Data that are contained in handouts should relate to a typical budget for a rural health center</li> <li>▪ A three-month period should be used in the calculations</li> </ul>	<p><b>Visual Aid 5:</b> Use this handout as an example of the data to be developed for the exercise.</p> <p>Three sets of data for group exercise should be prepared in advance &amp; distributed to participants</p>
11:30 – 12:30	<ul style="list-style-type: none"> <li>▪ Group exercise continues</li> </ul>	
	<b>LUNCH BREAK</b>	
13:30 – 14:30	<ul style="list-style-type: none"> <li>▪ Group presentations</li> <li>▪ Trainer should assist with final review of key steps for planning and carrying out PMI at a district-based health facility</li> </ul>	<b>Visual Aid 6:</b> Final review of key steps involved in PMI
14:30 – 15:00	<ul style="list-style-type: none"> <li>▪ Final and comprehensive course evaluation</li> <li>▪ Post-test</li> </ul>	
15:00 – 16:30	<b>Closing Ceremony and Refreshment/Cocktail</b>	
16:30 – 17:00	<ul style="list-style-type: none"> <li>▪ Trainers' final meeting to review the outcome of the workshop &amp; finalize plans to develop a training report</li> </ul>	

**Visual Aids**  
**For**  
**Day Five Sessions**

# **VISUAL AID 1**

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## **OBJECTIVES**

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By the end of Day Five, participants will be able to:

- (a) Describe the steps that are recommended to perform financial monitoring and analysis at health center level
- (b) List the indicators that are needed to calculate the recovery rate of a health center
- (c) Describe the use of recovery rate as the method that can be used to determine the financial viability of a health center

## **VISUAL AID 2**

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### **INDICATORS OF FINANCIAL MONITORING**

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#### **Financial Monitoring**

The financial monitoring is intended to analyze the financial resources mobilized through the sale of the drugs, contraceptive methods, and other services and the cost of these products and services.

This exercise must be done for each of the selected priority activities to be monitored and also for the entire facility.

#### **The indicators used refer to:**

- 1) the income generated by each activity and by the entered facility during the three- or six-month period of time covered by the monitoring from all sources, including donations
- 2) the level of expenditure for each priority activity and for the entire facility, including the personnel
- 3) the marginal benefit or loss generated/created by each activity and by the entire facility for the six-month period covered by the monitoring

The comparison of these figures will allow evaluating the likelihood of sustaining the activities with or without external financial support. The analytical tools used are the following.

**Expenditures:**      **Grid to determine the cost of the supplies used the last six months**  
**(Drugs, contraceptive methods, register)**

No	Type of Products /Supplies	QUANTITY USED PER MONTH							Unit Cost	Total Cost	SALES COST	
		1st month	2 <sup>nd</sup> month	3 <sup>rd</sup> month	4 <sup>th</sup> month	5 <sup>th</sup> month	6month	TOTAL			Unit cost	Total cost
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
15												
16												
etc												
Total												

Summary table of the income generated per type of product or service

	Nature of the product or service	1 <sup>st</sup> month	2 <sup>nd</sup> month	3 <sup>rd</sup> month	4 <sup>th</sup> month	5 <sup>th</sup> month	6 <sup>th</sup> month	TOTAL
1	Drugs							
2	Adult visits							
3	Prenatal service							
4	Vaccination							
5	FP visits							
6	Dental visit							
7	OBGYN visits							
8	Laboratory tests							
9	Delivery							
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
etc								
	TOTAL							

### Summary of the overall budget analysis

Item	Previous semester	Coming semester	
A – Balance account of previous semester		(Income – expenditures)	
B – Income from previous semester			
C – Total available at the beginning of the starting semester(A+B)			
1. FIXED EXPENSES/COSTS	DISBURSED	PLANNED	DISBURSED
Costs of supplies at:			
Delivery unit			
Dental unit			
Laboratory unit			
Prenatal/FP unit			
Etc			
Cost of the management tools used			
Utility cost			
- Electricity			
- Gas/transport			
-Water			
- Telephone			
- Salaries of personnel			
- Motivation			
-Etc			
TOTAL			

## VISUAL AID 3

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### REVIEW OF COMMUNITY FINANCING CAPACITY TO COVER SELECTED OPERATING AND INVESTMENT COSTS

Categories	At Community Level	At Health Center Level	At the Health Zone Level	At the Regional Level
Medicines & supplies	Excellent	Excellent	Good	Very Poor
Functioning/operating costs	Excellent	Excellent	Poor	Very poor
Personnel	Excellent	Excellent	Poor	Very poor
Monitoring & Supervision costs	Excellent	Excellent	Poor	Very poor
Continuing education/training	Good	Good	Very poor	Very poor
Building investment	Good	Good	Very poor	Very poor
Equipment	Good	Poor	Very poor	Very poor
Depreciation	Good	Poor	Very poor	Very poor

**Source: Baer F. et al, studies of health care financing by partners under the SANRU Project, 1987, MOH/DR Congo**

## **VISUAL AID 4**

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### **REVIEW OF RECOMMENDED STEPS FOR FINANCIAL ANALYSIS**

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Some of the recommended steps in financial analysis of a health center include:

- (1) Inventory the expenditures and receipts for the health center operations
- (2) Develop a financial statement (balance sheet) for the health center (see model provided in annex)
- (3) Determine the viability of the health center's operations through calculation of the recovery rate

# VISUAL AID 5

## EXAMPLE OF DATA TO BE PROVIDED TO PARTICIPANTS FOR PRACTICAL GROUP EXERCISE

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(1) **Summary table of health center costs**

#	Description/Category	Total cost per quarter
1.	Medicines	1,345.00
2.	Management tools (office supplies)	106.00
3.	Personnel-related costs	3,900.00
3.	Operating costs	822.00
	<b>TOTAL</b>	<b>\$6,173.00</b>

(2) **Summary table of revenues (receipts)**

#	Category	January	February	March	Total
1.	Primary care consultations	\$450.00	\$380.00	\$500.00	\$1,330.00
2.	Prenatal consultations	\$350.00	\$400.00	\$500.00	\$1,250.00
3.	Deliveries	\$400.00	\$450.00	\$350.00	\$1,200.00
4.	Medicines	\$850.00	\$900.00	\$1,500.00	\$3,250.00
5.	Other contributions	\$100.00	\$100.00	\$100.00	\$300.00
	<b>TOTAL</b>				<b>\$7,330.00</b>

(3) **Summary table of calculated number of cases**

#	Type of consultation	Number of cases/3 months
1.	Curative consultations (adults)	140
2.	Curative consultations (pediatrics)	160
3.	Prenatal consultations	150
4.	Deliveries	100
	<b>TOTAL</b>	<b>550</b>

(4) **Calculation of indicators (Generic examples)**

$$(a) \quad \text{Mean revenue (receipt) per case} = \frac{\text{Total Receipts}}{\text{Number of cases}} = \$13.33/\text{Case}$$

$$(b) \quad \text{Mean cost per case} = \frac{\text{Total Cost}}{\text{Number of cases}} = \$11.22/\text{Case}$$

$$(c) \quad \text{Recovery Rate} = \frac{\text{Mean Receipt/Case} \quad \$13.33/\text{Case}}{\text{Mean Cost/Case} \quad \$11.22/\text{Case}} = 1.18$$

## **VISUAL AID 6**

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### **FINAL REVIEW OF KEY STEPS FOR IMPLEMENTING PMI**

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1. Select the monitoring team and allocate tasks to each member
2. Determine the target population for each activity
3. Identify and assess the sources of data to use
4. Obtain a list of personnel for each facility
5. Perform the sampling and data collection using a systematic sampling method to cover all the period
6. Fill out the monitoring results grids
7. Draw the curve of the results
8. Analyze and determine the factors of bottleneck identified using the PMI for PHC (PMIP) services grid
9. Compare the previous to the actual performance for each activity
10. Carry out planning for the corrective measure to apply
11. Carry out budgeting for the next six months

# **Annexes**

## **Tools and Approaches For Performance Monitoring And Improvement**

- 1. List of urban zones or districts and the related population** (See grid in annex of the document)

#	Name of village/urban zone	Total population	Distance to health facility	Accessibility to EPI services	Accessibility to PCC/PC & FP/HIV services
	Total				

- 2. List of health personnel for the health facility to be monitored**

#	Personnel Name	Functions/tasks

- 3. List of monitoring team members (health personnel, community representatives) who are participating in the monitoring exercise**

#	Personnel Name	Functions/tasks	Origin/organization

### MONITORING OF EXPANDED PROGRAM OF IMMUNIZATION (EPI)

DETERMINANT	INDICATOR	SOURCES OF INFORMATION	METHOD OF CALCULATION
TARGET PO. of the catchments areas	Infants 0-11 months	* Civil register * Census * Data from the LQAS	$\frac{\text{Total pop.} \times \text{birth rate} \times \text{n. months object-monitoring}}{12} =$
AVAILABILITY	% of days without interruption in stock of vaccines	* Inventory book * Daily record of essential drug and vaccine distribution	$\frac{\# \text{ of days in period} - \# \text{ days without vaccines}}{\text{Number of days in monitoring period}} \times 100 =$
ACCESSIBILITY	% of target population living within a 15km radius of a Health Post/Health Center	* Geographic map of health coverage * Census	$\frac{\text{Target pop. living within 15km from HC} \times 0.048}{\text{Target population}} \times 100 =$
UTILIZATION	% of target pop. having received at least one vaccine dosage	* Registers of consult. with healthy newborns * Vaccination records	$\frac{\# \text{ of children reaching 1 yr. during the monitoring period \& having received at least 1 vaccination}}{\text{Target population}} \times 100$
ADEQUATE COVERAGE	% of target pop. having received the totality of vaccines with respect to age and the interval	* Registers of consult. with healthy newborns * Vaccination records	$\frac{\text{Target pop. fulfilling the requirements of adequate coverage}}{\text{Target population}} \times 100$
EFFECTIVE COVERAGE	% of target pop. responding to adequate coverage having been vaccinated with vaccines stocked at a temp. of between 4 and 8 degrees	* Registers of consult. with healthy newborns * Vaccination records * Temperature regulation charts	Adequate coverage X score quality of the cold chain

## MONITORING OF PRENATAL CONSULTATIONS

DETERMINANTS	INDICATORS	SOURCES OF INFORMATION	METHOD OF CALCULATION
TARGET POP (catchments area population)	Number of women having given birth within the period of the current monitoring	* Maternity register * Birth record of village chief * Data from the LQAS survey	$\frac{\text{Total pop.} \times 0.05 \times \text{No. months Monitoring Objective}}{2} =$
AVAILABILITY	% of days with uninterrupted stock of Iron/folic acid	* Inventory book * Daily record of essential drug and vaccine distribution	$\frac{\# \text{ days of the period} - \# \text{ days without meds}}{\# \text{ of days in the period}} \times 100$
ACCESSIBILITY	% of the target pop. living within a 5 km radius of a Health Post or a rural maternity	* Geographic map of health coverage * Census	$\frac{\text{Target pop. within a 5 km radius of HC}}{\text{Target pop.}} \times 100$
UTILIZATION	% of target pop. having received at least one prenatal consultation	* Prenatal consultation register * Prenatal consultation voucher	$\frac{\# \text{ of target pop women having received 1 PC}}{\text{Target pop.}} \times 100$
ADEQUATE COVERAGE	% of target pop. having received at least 3 prenatal consultations	* Prenatal consultation register * Prenatal consultation voucher	$\frac{\# \text{ of target pop women having received 3 PC}}{\text{Target pop.}} \times 100$
EFFECTIVE COVERAGE	% of target pop. having received at least 3 prenatal consultations w/measurement of blood pressure, weight, and height.	* Prenatal consultation register * Consultation guideline	$\frac{\# \text{ of women fulfilling conditions for effective coverage}}{\text{Target pop.}} \times 100$

## MONITORING OF PRIMARY CURATIVE CARE CONSULTATIONS

DETERMINANT	INDICATOR	SOURCES OF INFORMATION	CALCULATION METHOD
TARGET POP(of catchments areas)	The entire population	* Monograph of the region * Census	$\frac{\text{Total pop.} \times \text{\# of months monitoring objective}}{12}$
AVAILABILITY	% of days with uninterrupted stock of Aspirin, Chloroquine, Cotrimoxazole, SRO	* Inventory book * Daily record of essential drug and vaccine distribution	$\frac{\text{\# of days in the period} - \text{\# of days with interruption}}{\text{\# of days in the period}} \times 100$
ACCESSIBILITY	% of the pop. living within a 5km radius of a Health Post	* Geographic map of health coverage * Census	$\frac{\text{Target pop. living within 5 Km. radius}}{\text{Target pop.}} \times 100$
UTILIZATION	No. of consultations per target population	* Register of curative consultation * Curative consultation vouchers	$\frac{\text{\# of consultations}}{\text{Target pop.}}$
ADEQUATE COVERAGE	% of consultations where proper treatment was received and the correct price was paid	* Register of curative consultation * Curative cons. Vouchers	$\frac{\text{\# of consultations fulfilling the conditions for adequate coverage}}{\text{Target pop.}} \times 100$
EFFECTIVE COVERAGE	% of consultations responding to adequate coverage and treated according to the algorithms	* Register of curative consultation. * Curative consultation vouchers * Algorithms	$\frac{\text{\# of consultations fulfilling the conditions for effective coverage}}{\text{target pop.}} \times 100$

## MONITORING OF FAMILY PLANNING SERVICES

DETERMINANT	INDICATOR	SOURCES OF INFORMATION	CALCULATION METHOD
TARGET POP. Of the catchments areas	Population of women at child bearing age (15-49 yrs old)	* Monograph of the region * Census	Total target pop. X # of months monitoring period ----- 12
AVAILABILITY	% of days with uninterrupted stock of modern contraceptive methods	* Inventory books * Daily record of contraceptive methods distributed	# of days in the period – # of days with stockouts of contraceptives ----- X 100 # of days in the period
ACCESSIBILITY	% of women at child bearing age living within a 5km radius of a Health facility being monitored.	* Geographic map of health coverage * data from the LQAS survey * Registers and individual files and notes	Target women living within 5 Km. radius of the health facility ----- X 100 Target pop. of women
UTILIZATION	# of women at child bearing age that have utilized at least once the FP services in the during the period being monitored	* Register of FP activities. * Individual files or book notes	# of target women that have utilized the FP services at least once during the monitoring period. ----- Target pop. of women
ADEQUATE COVERAGE	% women at child bearing age using modern contraceptive with respect of the established norms and standards protocols.	* * Register of FP activities. * Individual files or book notes * Data from the LQAS survey	# of women fulfilling the conditions for adequate coverage indicators requirement ----- X 100 Target pop. of women
EFFECTIVE COVERAGE	% of women at child bearing age using continuously modern contraceptive methods for more than 2 years	* * Register of FP activities. * Individual files or book notes * data from the LQAS survey	# of women fulfilling the conditions for effective coverage indicator requirements ----- X 100 Target pop. of women

### Grid to Draw the Monitoring Curve

Effective coverage rate						
Adequate Coverage rate						
Utilization rate						
Accessibility rate						
Availability rate						
Target Population	0%	20%	40%	60%	80%	100%

## ANALYSIS OF THE CURVE & MONITORING RESULTS

Activity: \_\_\_\_\_

<b>Bottlenecks</b>	<b>Yes or No</b>	<b>Major Determining Factors (Causes)</b>
Target population and availability		
Availability and accessibility (at 100%)		
Accessibility and utilization		
Utilization and adequate coverage		
Adequate coverage and effective coverage		

**Grid to compare previous and current monitoring results for each activity**

**Activity:** \_\_\_\_\_

Determining Criteria (indicators)	% achieved at the previous monitoring	Solution decided at the previous monitoring	% achieved at the current monitoring	Comparison of the two monitoring activities (comments)	Corrective measures to be applied during the coming six months
Availability					
Accessibility					
Utilization					
Adequate coverage					
Effective coverage					

### The Action Plan format for each activity monitored

Activity: \_\_\_\_\_

Determining factors	% current and planned results		New strategy to apply	Places	Dates	Human resources	Other essential resources	Possible constraints
	current	objective						
Availability								
Accessibility								
Utilization								
Adequate coverage								
Effective coverage								

## V. BILIOGRAPHY

Advance Africa Project and Senegal Ministry of Health, Guide du Monitoring des Activités de Référence du Centre de Santé, November 2003.

Akin, J.S.; Griffin C.C.; Guilkey D.K.; Popkin, B.M. The Demand for Primary Health Services in the Third World. Rowman and Allanheld Publishers: USA 1985, pp. 104-164.

Bertrand, J. and A. Tsui. Indicators for Reproductive Health Program Evaluation: An Overview. Chapel Hill, NC: Carolina Population Center, The Evaluation Project, 1995.

Bertrand, J. and A. Tsui. Selected reproductive health indicators for safe pregnancy and women's health, Chapel Hill, NC: Carolina Population Center, The Evaluation Project, 1995.

Bertrand, J., R. Magnani and N. Rutenberg. Program monitoring and impact assessment for family planning evaluation. Chapel Hill, NC: Carolina Population Center, The Evaluation Project, 1995.

Bulatao, R. Five steps to develop indicators for sexual and reproductive health projects. World Bank: Population, Health and Nutrition Department, 1995.

Diallo I., Moulouba R., Sarr LC. "Primary Health Care: From Aspiration to Achievement." WORLD FORUM VOL.14 , WHO Geneva, 1994, pp.349-355

Diallo I, Sarr L., Borghese G. Wone I. Evaluation de la participation financière des usagers dans 102 postes de santé de trois districts au Sénégal Dakar Médicale, N. 2, Tome XL, Dakar, Sénégal, 1995. p 167-173.

The Evaluation Project. Handbook of PERFORM Indicators. Chapel Hill, NC: Carolina Population Center, The Evaluation Project, 1996.

Fisher A, Mensch B, Miller R, et al, Guidelines and instruments for a family planning situation analysis study. New York: The Population Council, 1992.

Graham, W, and V. Filippi. Monitoring maternal health goals: How well do the indicators perform? London, UK: Maternal and Child Epidemiology Unit, London School of Hygiene and Tropical Medicine.

Penelope Harve, Deirdre Depeline, Jane Hall. "Impact and Outcome Effects: Assessing Program Effects" as found in Evaluation of Health Promotion: A Health Workers Guide. MacLennan and Petty: Sidney, Philadelphia, London; 1991, p. 101-127.

Project Implementation Course for USAID Project Managers, by Development Associates, Inc., Arlington, Virginia, 1996.

Tanahashi, T. Health Services Coverage and its Evaluation. Bulletin of World Health Organization (WHO), 56 (2), Geneva 1978, P. 295 – 303.

REACH and SANRU Project, Study on Alternative Financing in Ten Well-Developed Health Zones in the Democratic Republic of the Congo. 1986.

Zawaira, Felicity. Collection, Analysis and Use of Data for Monitoring and Evaluating Reproductive Health Interventions: The Zimbabwean Experience. Ministry of Health and Child Welfare, Harare, Zimbabwe. 1996.

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